ENTISTRY
LIBRARY

Dental Digest

LIBRARY

January 1950

IN THIS ISSUE

An Intraoral Welding Process 8
The Finishing of Alloy Restorations 15
Announcement of a Meeting in Memory of Leo Winter ... 17
Palatal Repair by Gaining Tissue from the Cheek Lining 18
Dental Photography 20
Multiple Myeloma 23
Platinum Castings to Close Tolerance for Reinforcing under Porcelain 24
Antihistaminic Drugs in the Common Cold 29
Clinical and Laboratory Suggestions 30
The Editor's Page 32
Medicine and the Biologic Sciences 33
Contra-Angles 37
Ligation of Carotid Arteries for Neoplasms of the Head and Neck 44

(A Complete Table of Contents Appears on Page 7)

for the

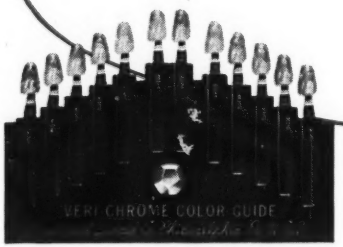
quiet beauty of

"living" esthetics...

for

natural tooth colors...

SPECIFY · SPECIFY · SPECIFY · SPECIFY ·



Specify porcelain and plastic Five-Phase Anteriors with the Veri-chrome Color Guide.

FIVE-PHASE

ANTERIORS

AVAILABLE IN PORCELAIN AND PLASTIC

IN VERI-CHROME NATURAL TOOTH COLORS

Veri-chrome

UNIVERSAL DENTAL COMPANY · 48th at BROWN STREET · PHILA. 39, PA.

Dental Wahr

Vol. 56, No. 1

Dental Digest

Registered in U.S. Patent Office

JANUARY 1950

An Intraoral Welding Process
Jacob L. Karp, M.D., D.M.D. 8

The Finishing of Alloy Restorations
John H. Mosteller, D.D.S. 15

Announcement of a Meeting in Memory of Leo Winter to be Held January 25, 1950. 17

Palatal Repair by Gaining Tissue from the Cheek Lining
Joseph E. Schaefer, M.D., D.DS., and Ralph C. Rudder, M.D., D.D.S. 18

Dental Photography
Jack F. Cathcart, D.D.S. 20

Multiple Myeloma (An Abstract) 23

Platinum Castings to Close Tolerance for Reinforcing under Porcelain
Fred R. Felcher, D.D.S. 24

Antihistaminic Drugs in the Common Cold (An Abstract) 29

Clinical and Laboratory Suggestions 30
1. Painless Palatal Injections. 2. Ease of Adaptation of Cotton Rolls. 3. Use of Articulating Paper. 4. Prevention of Fogging of Eyeglasses and Mirrors. 5. Softening Inlay Wax. 6. A Simple Method of Freezing Lower Third Molars.

The Editor's Page ..... 32 Contra-Angles 37

Medicine and the Biologic Sciences 33

Ligation of Carotid Arteries for Neoplasms of the Head and Neck (An Abstract) 44

About Our CONTRIBUTORS

JACOB LEON KARP, M.D. (University of Berlin, 1920) D.M.D. (University of Berlin, 1923) is a member of the Royal Society of Medicine and the British Dental Association. Doctor Karp specializes in bridge construction. In the present issue he publishes for the first time in DENTAL DIGEST, presenting AN INTRAORAL WELDING PROCESS, a description of a method of welding directly in the patient's mouth. Various examples of ways in which this procedure may be applied are included.

JOHN H. MOSTELLER, D.D.S. (Loyola University, School of Dentistry, New Orleans, 1944) has done considerable research in dental amalgam and related materials. Doctor Mosteller publishes in DIGEST for the first time this month. His article is, THE FINISHING OF ALLOY RESTORATIONS.

JOSEPH E. SCHAEFER, M.D., D.D.S., and Ralph C. Rudder, M.D., D.D.S., present in this month's DIGEST the fourth in their series of case histories which have come under their own observation, PALATAL REPAIR BY GAINING TISSUE FROM THE CHEEK LINING.

JACK F. CATHCART, D.D.S. (University of California, College of Dentistry, 1926) is known to DIGEST readers for his articles on crown and bridge prosthetics. This month Doctor Cathcart's article, DENTAL PHOTOGRAPHY, gives in detail the equipment necessary and general rules for the dentist who may wish to take his own dental pictures.

FRED R. FELCHER, D.D.S. (Chicago College of Dental Surgery, Loyola University, 1909) is engaged in the practice of general dentistry with special emphasis on porcelain techniques. Doctor Felcher's article this month, PLATINUM CASTINGS TO CLOSE TOLERANCES FOR REINFORCING UNDER PORCELAIN, discusses a casting technique which he has evolved for the construction of porcelain jacket crowns.

EDWARD J. RYAN, B.S., D.D.S., Editor
WANDA T. PICKARD, B.A., Assistant Editor
708 Church Street, Evanston, Illinois

Copyright, 1950, by Dental Digest, Inc. See page 4 for subscription data, etc. The magazine is mailed on the fifteenth of the month of issue.

An INTRAORAL WELDING *Process*

JACOB L. KARP, M.D., D.M.D., London

DIGEST

A Hungarian dentist, Alexander Rakos, has invented a welding process to effect repairs or additions to crowns and bridges directly in the patient's mouth. It is not necessary to remove the fixed bridge, for instance, when a new pontic is to be added to replace a newly extracted tooth. Fractured bridges may be repaired directly in the mouth. The saving of time, labor, cost, and inconvenience to the patient is of great importance.

The Apparatus

The welding machine consists of (1) a transformer with five different clamps producing between 2 and 8 volts, the approximate equivalent of an electric pocket battery, and (2) two similarly shaped handpieces, one carrying a carbon in the tip which is called the torch, and the other with a copper end used as an electrode. Both handpieces are connected with the transformer through the clamps.

Voltage

In intraoral welding the highest voltage possible to produce a heat of 3000° Centigrade (5432° Fahrenheit) is normally used.

Procedure

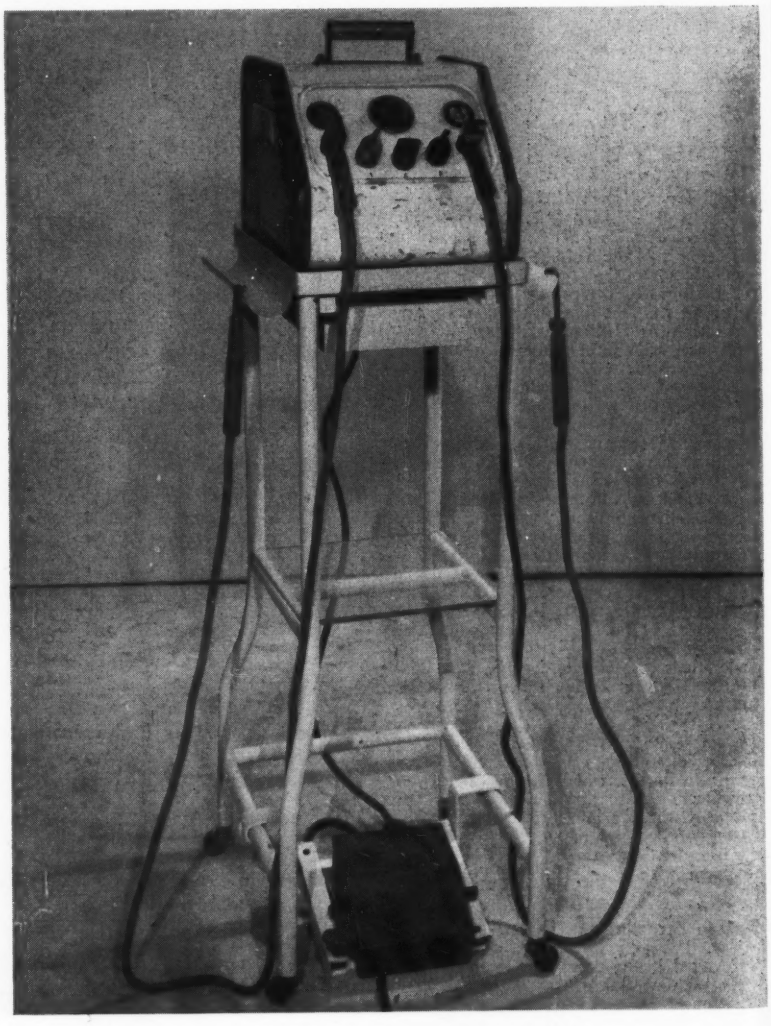
The welding is accomplished in the following manner:

1. The carbon tip of the high resistance welding torch is placed, cold and dead, into position in the patient's mouth where fusion is desired, on top of a piece of gold-covered platinum sheet, with 1 or 2 copper electrodes nearby (Fig 2.).

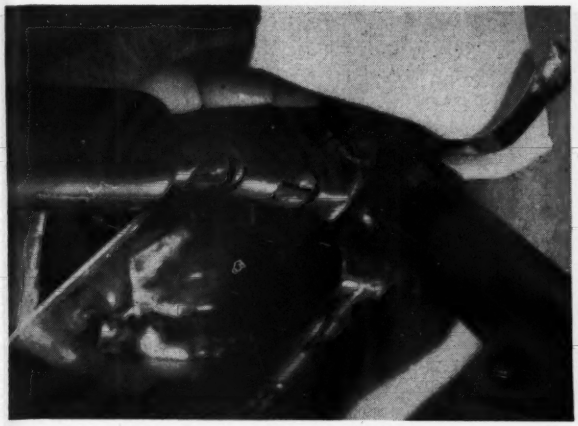
2. By means of a foot control the electric current is closed for just under a second (the operator counts "twenty" to himself as the time equivalent.).

3. A temperature of nearly 3000° Centigrade (5432° Fahrenheit) is developed at the carbon tip of the welding torch effecting the immediate fusion through the melting of the metal.

4. Any metals used in dentistry, such as gold, platinum, or any of the



1. ***A transportable Rakos welding outfit used at the table clinic given during the 89th Annual Meeting of the American Dental Association, September 1948, in Chicago.***



2. ***A patient is prepared for an intraroral welding. The palate is covered with a piece of mica. An absorbent cotton roll placed over the bridge buccally is covered with a piece of wet absorbent paper. The carbon tip of the welding torch is clearly visible on top of a piece of platinum sheet covered with gold from the palatal side. (Both ends of the platinum sheet are normally covered with gold.)***

3. ***Replacement of an extracted tooth near a fixed bridge by welding on a prepared gold backed acrylic pontic. The patient shown has a fixed bridge carried on a full crown on the upper first molar and a three-quarter crown on the upper right cuspid. The upper right lateral has marked periodontal disease and has to be extracted.***

alloys, are instantaneously fused.

Preparation—The metal of the bridge must be prepared in a V-shaped form on the spot where welding is to take place. After the welding has been finished (1) the overhanging metal is removed, (2) the occlusion is adjusted, and (3) the welding spot is polished until it is as smooth as the rest of the bridge.

Tissue Protection—1. Immediately after the operation absorbent cotton soaked in water is applied, or cold water is sprayed on to the bridge, quickly reducing the temperature to normal.

2. The welding is finished before the accumulated heat can be conducted into the adjacent parts and at the same time a steam film, produced by the enormous heat, protects the living tissues.

Shock Eliminated—A harmless, low voltage, electric current with high amperage is used without flash or arc, eliminating danger of shock to the dentist or the patient.

Intense Heat Required—The welding heat used has to be intense but is highly localized and concentrated. It is increased to its peak at the spot where the welding takes place in just under a second and is decreased again instantaneously.

Patient Protection—Experience has shown the remarkable fact that such a thermal action should not be carried out at less than 3000° Centigrade (5432° Fahrenheit). The patient is suitably prepared by putting (1) wet asbestos paper and a piece of mica over the tissues in the area adjacent to the welding and over the lips, and (2) a piece of absorbent cotton is placed buccally and labially to the bridge (Fig 2).

Results are Successful

1. The operation is performed so quickly that only a slight reaction is experienced.

2. Abutment teeth welded in this manner have not shown any deleterious effect to the pulp or periodontium.

3. Repeated observations years later have also been negative and patients who have experienced a mouth welding are quite agreeable to a repetition if necessary.

Replacement of a Tooth and Boxing in a Bridge

Following are reports of several characteristic cases of mouth welding which demonstrate the scope and applicability of this process.

Case One—A patient had a seven-tooth fixed upper bridge for twenty-two years. During the last two years the porcelain facing of the lateral fell off repeatedly. Every method of replacement was tried, including riveting in the mouth, but all failed.

Welding Procedure—With the use of the Rakos welding equipment, the procedure involved was the following:

1. The boxing of the lateral pontic was cut off the bridge.

2. An impression was taken.

3. With due regard to the actual bite, a new boxing was cast with a new long pin tooth fitting.

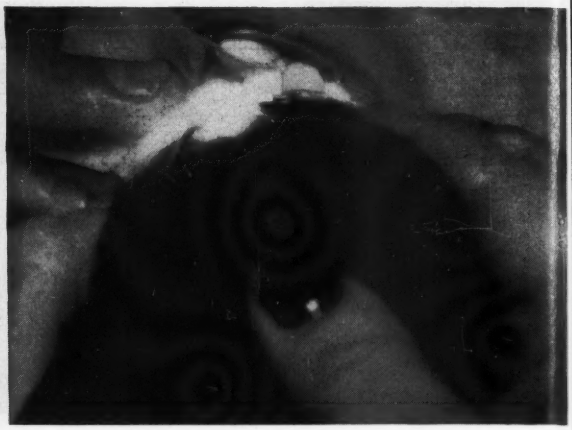
4. The new boxing was welded on to the rest of the bridge which took about ten minutes including the removal of the overhanging gold and polishing.

5. Afterwards a new long pin tooth was cemented in position.

Replacing an Extracted Tooth Near an Existing Bridge

Case Two—In a case of periodontal disease one tooth adjoining an existing bridge had to be removed. In order to replace it, (1) an impression was taken before the extraction and (2) after the extraction, having been prepared by the laboratory technician and tried on, the new part carrying a wing of platinum covered with gold was welded on to the bridge (Figs. 3, 4, 5, 6, and 7).

4. *The lateral extracted. View of the bridge from the palatal.*



5. *The already prepared gold backed acrylic pontic being welded on to the cuspid abutment.*

Welding New Bridge Units on to an Existing Bridge or Replacing an Old Bridge Unit

Case Three—1. From a plaster impression the new unit is prepared with two wings of platinum, covered with gold on each side (mesial and distal.) 2. The new part is brought into position and welded on, and the surplus is ground off and polished. 3. The long pin tooth or the facing is cemented on afterward.

Acrylic Resin in Intraoral Welding

Dentists constructing fixed bridges are often confronted with the problem of replacing porcelain facings on platinum pins. In such cases Rakos fusion welding is a satisfactory method to effect a quick and durable repair.

Method of Choice—The method developed in connection with acrylic resin is the following: 1. Enlarge the original two holes in the boxing of the porcelain pin tooth with a number 2 round bur.

2. Prepare two pieces of metal wire about 4 millimeters in length to fit these holes. Any metal can be used, gold, platinum, or nonprecious metal.

3. Two pieces of wire are put through their respective holes and allowed to protrude on the buccal side (labial) about 1 millimeter, and on the palatal side about 2 millimeters.

The Impression—1. A piece of modeling compound is pressed from the palatal side against the protruding parts of the wire and cooled so that the position of the wire is properly fixed.

2. An impression is taken with modeling compound from the buccal part, giving the exact relationship of the pieces of wire to the boxing.

3. The whole impression is removed, invested with the complete length of the wire, and an acrylic pin tooth cast in the color chosen.

4. The new acrylic tooth is cemented into its boxing with about 2 millimeters of wire protruding on the palatal side.

5. Two small separate pieces of

6. *The platinum deposit after the welding is clearly visible from the palatal.*

7. *Labial view of the completed case. The time taken for this series of steps to the completed operation was about ten minutes.*

8. *Welding an acrylic long pin tooth to an existing bridge. The gold backing of a Richmond Crown.*

9. *The acrylic long pin tooth has been welded on.*

platinum foil or sheet covered with gold are perforated and put over the two pieces of wire from the palatal side.

6. The protruding parts of the pieces of the wire are welded down until a proper fusion results with the platinum foil or sheet on the back of the gold boxing.

Replacing a Long Pin Tooth in an Existing Bridge

1. A long pin tooth is fitted on to the boxing with the pins protruding about ½ millimeter.

2. A piece of platinum wide enough to cover both pins is charged with gold.

3. Two holes are drilled into the gold covered platinum as big as the pins. The platinum is put over the tooth after it has been cemented.

4. It is welded in one or two attacks to the boxing from the palatal side.

5. The surplus is removed and the boxing polished (Figs. 8 and 9).

Welding a Protecting Edge on to an Exposed Porcelain Facing

1. A piece of platinum as wide as the exposed porcelain facing is cut and pressed on to the protecting metal with one end (a) while the other end (b) is made to fit the porcelain facing.

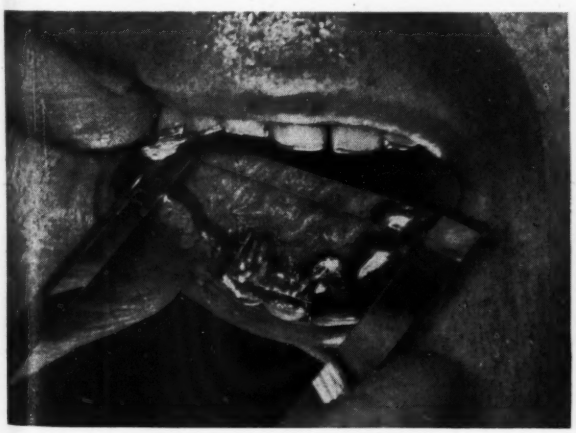
2. Part (a) after having been covered with gold is put into position and welded on.

3. Part (b) of the platinum is rotated over the porcelain facing.

4. The surplus is ground off and the platinum polished, thus restoring the full protection.

Welding of a Fractured Bridge

A large bridge had broken. Instead of having to remove this bridge unit by unit which would have rendered it unusable and might have damaged the teeth carrying the bridge, it was possible to weld the bridge together where the fracture had occurred. In this case there were two gold bridges in the lower jaw. Small pieces of platinum were added to each lower bridge until the necessary height was reached.



10. *Welding a fractured bridge. View of the bridge from the palatal, the fracture is clearly visible between the cuspid and the bicuspid.*

11. *Notice how well timed the spraying of the cold water is. The torch is still aglow while a drop of water is already visible on the patient's left cheek.*

12. *The deposit of the platinum after the welding reinforcing the previous fracture between the cuspid and the bicuspid.*

13. *A bit of metal has shot through to the buccal between the cuspid and the bicuspid.*

Repair of a Fractured Gold Bridge

1. The place where the fracture has occurred must be enlarged and deepened to a V-shape.

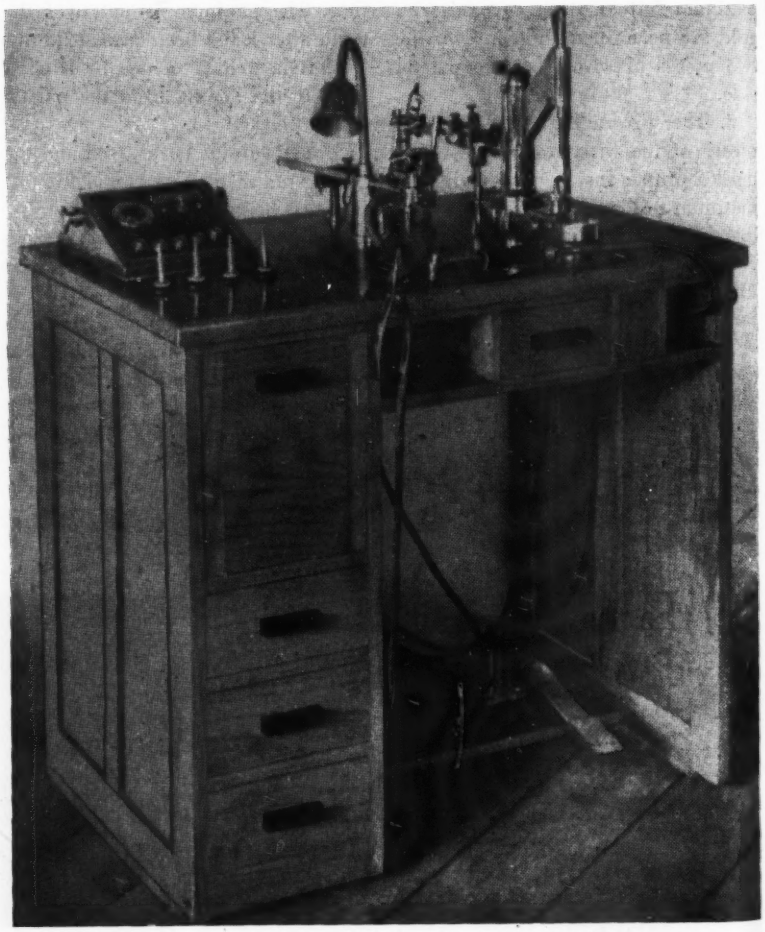
2. A piece of platinum covered with gold 2 to 3 millimeters larger than the actual cavity is prepared, the platinum is brought into position and welded on in one or several attacks.

3. The bridge is strongly reinforced on the fracture and by using this unique method the painful and time-consuming process of removing the bridge is avoided.

4. It is important to control the bite and correct the occlusion, if necessary, by raising the bite (Figs. 10, 11, 12, and 13).

Insertion of a Bridge in Two Parts and Welding it Together in the Mouth

Sometimes it is extremely difficult to make the different abutments sufficiently parallel to insert a bridge in one piece. In such cases the bridge can be inserted in two parts. The parts can be welded together in the mouth by the Rakos process thus avoiding the necessity of (1) devitalizing one tooth or (2) having to remove so much that this tooth reacts intensely toward thermic influences for a long time.



14. *The Rakos welding outfit with its special instruments.*

Replacement of a Broken Rail on a Steele's Backing

Quite often the rail of a Steele's backing breaks off and the whole process has to be removed as no other method of repair is known. With the Rakos welding system, however, the Steele's facing can be repaired in the mouth in the following way:

1. A needle (preferably not steel) the size of the rail is used.

2. A piece of sheet platinum bent to the size of the facing is placed around the needle.

3. Gold is applied to the back of the platinum with the needle still in position.

4. An undercut is made 2 or 3 millimeters in length on the tip of the facing prepared in this way to permit an exact fitting of the facing.

5. The new backing is brought into position and with one touch of the torch welded on.

6. The facing can be cemented on immediately afterwards.

The whole operation, including the preparation of the new backing takes about twenty minutes. This method is satisfactory when applied in combined metal-acrylic bridge construction where part of the acrylic has broken off. The new backing is welded to the metal bar and the Steele's facing cemented on. Instead of the backing (1) a metal stump can be welded on to carry an acrylic crown to be inserted later, or (2) a piece of gold fitting the bar with the acrylic already baked on.

Welding a Perforated Gold Shell Crown

1. Remove the very thin metal part surrounding the hole.

2. Clean out the cavity, fill the cavity with cement and cover it with (1) platinum foil or (2) gold pellets.

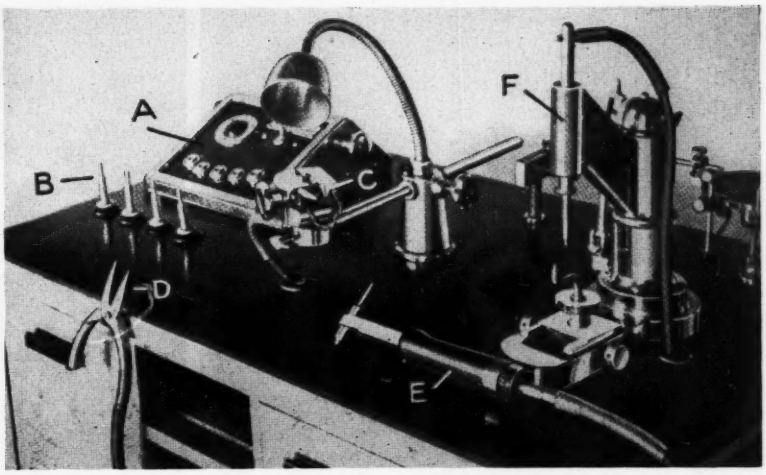
3. A piece of platinum sheet or platinum foil covered with gold is brought into position and in one or two welding attacks the hole is closed and the crown reinforced.

4. The surplus is removed and the spot polished.

5. It is only possible to weld a small amount of material at a time but additional metal can be welded on up to any thickness required by repeated operations.

Laboratory Uses

The Rakos fusion welding method is as valuable or perhaps more valuable in the laboratory where its scope is much wider. It is highly useful (1) to almost every dental surgeon who deals with dentures combined of metal and a layer of resin and (2) to the technician who produced the dentures in his own or the dentist's laboratory.



15. ***Close-up view of the transformer with the junction box; the control lamp with switch and unions into which the various connections (B) for the leads can be plugged. The work to be welded can be held in the vice (C) mounted on an adjustable stand, or can be held by a pair of electric pliers (D). The welding torch is (E). For spot welding the equipment (F) can be used. It carries a plunger operated by a foot lever for advancing the upper electrode while the lower electrode is held in a chuck mounted on an adjustable table. The spot welder is occasionally used to tack two light sheet metal components together and then weld the seams by use of the torch.***

The Modern Denture—More and more frequently the modern denture is a structure composed of a metallic base and an additional layer of one of the acrylic resin components. For obvious reasons, the practitioner often prefers metal to resin alone.

Time-Consuming Repairs—Formerly any necessary repair on the metal part meant (1) stripping off the additional layer of vulcanite or resin, (2) soldering of the metal base, and (3) finishing the work by adding the layer of vulcanite or resin again. Every practitioner knows how much time is required to perform all the steps in this process.

Patient Satisfaction—The accident which necessitates the repair often occurs at a time when the patient cannot spare his denture and wants to have it back almost immediately. Patients are highly gratified at being able to have repairs or additions carried out immediately without the trouble and inconvenience of lengthier methods.

Additional Applications

1. The Rakos welding process is equal to all emergencies.

2. It is applicable to any kind of metal with a minimum amount of time.

3. Welding on stainless steel or vitallium, for instance, is performed as quickly as on gold or any other metal.

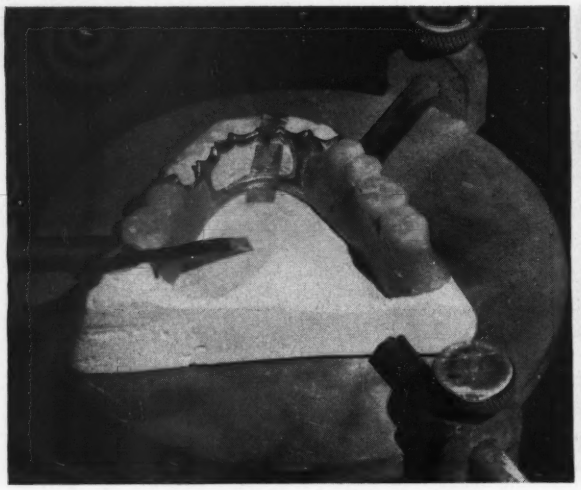
Fusing Platinum and Gold—1. A cabinet with a table top and specially designed instruments (Figs. 14 and 15) is placed in position.

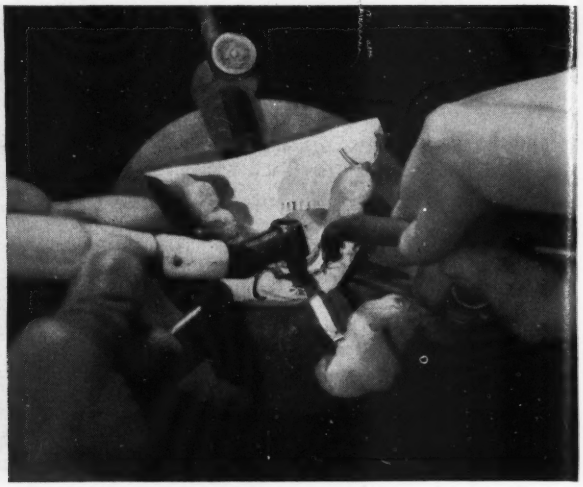
2. Platinum foil or sheet (Figs. 16 and 17) is covered in the usual way with gold and brought into position.

3. The broken part is fused by a touch of the torch.

A Homogeneous Welding—1. To make a homogeneous welding of a denture in stainless steel or similar metal, stainless steel wire is used as the fusion medium.

2. The strength of the current applied is varied according to the mate-





16. ***Welding a fracture of a continuous clasp on a lower gold acrylic denture. The denture is on a plaster model on the specially designed instrument table of the welding machine. The clamping screw secures the work in position. A piece of platinum foil is put underneath the fracture. A piece of sheet platinum covered with gold, which will be used for the welding is visible in the foreground on the left.*** **17.** ***The carbon torch is in position on top of the gold-covered piece of platinum sheet with a copper electrode nearby. A piece of wet absorbent cotton is ready to be dabbed on the welding spot after the operation. Because of the localized heat, the acrylic is not damaged.***

rial used and the size of the fracture.

Exact Fitting of Removable Dentures—1. By placing the denture on a plaster model exact fitting on removable dentures can be ensured.

2. The acrylic resin attached to the denture is not damaged by the process because of the strong localization of the heat.

3. The heat on the welded spot is cooled immediately (1) by dabbing it with wet absorbent cotton, or (2) by wrapping a piece of wet absorbent cotton around the resin part like an apron during the welding.

Welding Partial Dentures

Following are some of the possible situations which can be dealt with at once and in the same way by the Rakos method:

1. A broken clasp.
2. A fractured bar.
3. A new continuous (Kennedy) clasp added afterwards.
4. A tiny fracture on a skeleton prosthesis.
5. A rest which is broken off.
6. The addition of new elements.
7. New bridge elements and abutments can be fixed in position quickly on the plaster model, ensuring accuracy at the same time.

Conclusion

1. The vast possibilities opened up by the Rakos welding operation which permits the perfectly controlled use of 3000° Centigrade (5432° Fahrenheit) in the human mouth is obvious to dentists from the foregoing description of its innumerable applications.

2. It is the responsibility of dentists to add to their technical knowledge and to give their patients the benefit of progress and improvement in dental methods.

39 *Devonshire Place.*

We Can't Pay You, But—

No DENTAL author can ever be *paid* for a valuable technical or scientific article. The value of such material is above a monetary basis. In the preparation of a technical article, however, an author often expends money for drawings, photographs, models, or graphs. We should like to help defray some of these expenses.

Until further notice, DENTAL DIGEST *will allow* $25.00 *toward the cost of the illustrations provided by the author of every article accepted.*

If you have a constructive idea, an innovation, a new result of tried and proved experiment, put it down in writing, illustrate it, and send the material to: DENTAL DIGEST, 708 Church Street, Evanston, Illinois.

We can make suitable black-and-white cuts from Kodachrome transparencies.

We hope that you will accept this invitation!

The Finishing of ALLOY RESTORATIONS

JOHN H. MOSTELLER, D.D.S., Mobile, Alabama

DIGEST

No dentist would consider placing a gold inlay in a patient's mouth without first finishing and polishing the casting to the maximum luster of the metal. The obligation to complete alloy restorations in the same manner is not felt to the same extent.

Lack of thoroughness in amalgam restorative dentistry is caused chiefly by three considerations: (1) Inadequate fees for silver alloy restorations, (2) the conviction that a finished and polished amalgam restoration is not superior to an unpolished one, and (3) the fallacy accepted by some dentists that amalgam will not retain a polish.

The first consideration can be corrected by basing fees on the amount of time consumed and the value of the service rendered rather than on the cost of the materials used. In answer to the second, a well-finished and polished restoration is of positive value because it commands appreciation from the patient, respect from dental colleagues, and helps to promote better oral hygiene. A reliable way to fabricate a positive margin of enamel and amalgam at the same level is to finish the restoration at the second visit.

Causes of Tarnish

There are three reasons for the failure of a polish to last:

1. An excess of mercury will cause, among other detrimental results, a darkening of amalgam despite polish.[1]

2. Regardless of the amount of time spent in producing a mirror-like surface, tarnish will occur when restorations are inserted in the presence of moisture.[2]

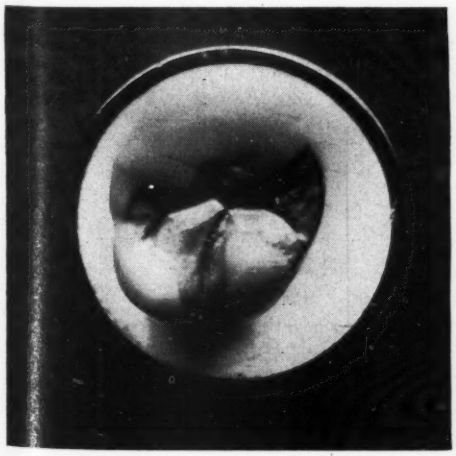
3. If the errors described above are avoided, polish still will not last if it is placed on an unsmoothed and scabrous surface.

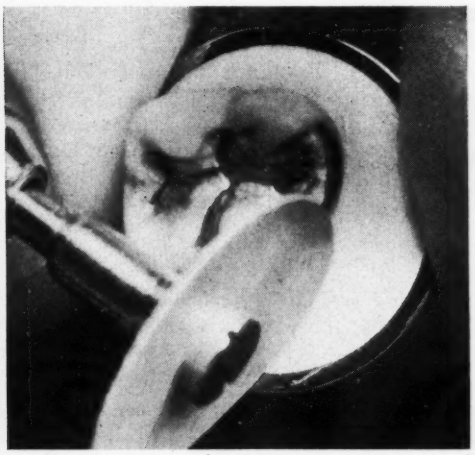
Conditions to Avoid—No matter what polishing agent is employed, freshly condensed amalgam cannot be merely wiped smooth with wet cotton at one sitting and polished the next with any hope of success. A macroscopically smooth surface must be established first; the final polish is then executed. In this way a lasting sheen may be expected.[2]

Recommended Procedure — The time spent in effecting satisfactory local anesthesia for a cavity preparation can be utilized in "finishing down" the restoration which has been inserted at the previous visit. Then, by administering a prophylaxis at the final visit rather than at the first, all the restorations can be polished at once without unnecessary loss of chair time. Dentists whose schedule

[1]Phillips, R. W., and Boyd, D. A.: Importance of Mercury to Alloy Ratio in Amalgam Fillings, J.A.D.A. **34**:451-458 (April) 1947.

[2]Miller, E. Carl: Clinical Management of Amalgam, J. Tenn. D. A. **25**:7-15 (January) 1948.

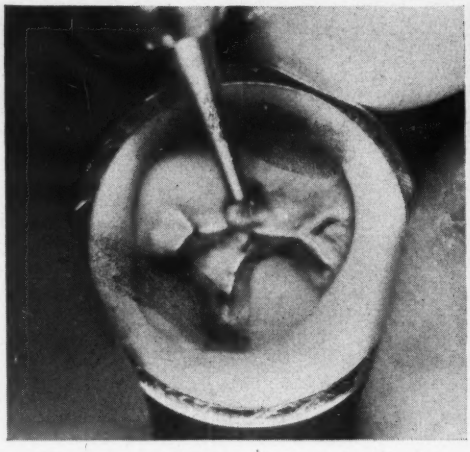




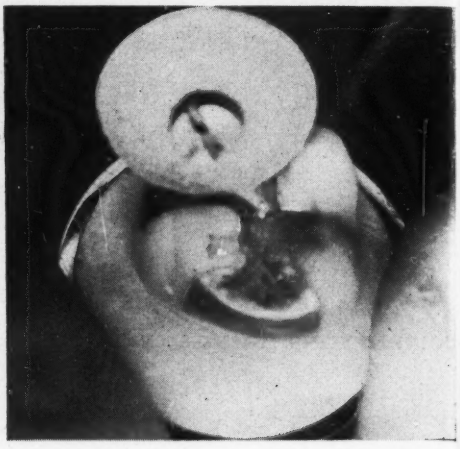
1. ***Carved restoration at the end of first visit.***

2. ***Flushing of margins with sandpaper discs.***

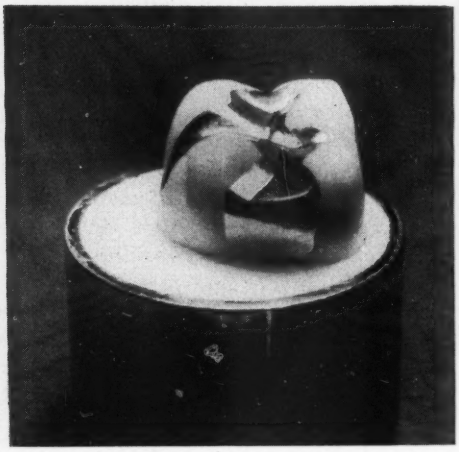
3. *Gross roughness removed by finishing burs.*



4. *Smoothing of surfaces with a sulci disc. Note that the midget headed mandrel allows greater surface action of the rubber disc.*



5 *and* **6.** *Completed restorations.*



requisitions the time preceding cavity preparation will have to recognize that some other time must be allocated to the procedure and quote fees accordingly.

Finishing Technique

As much time is usually spent in procuring the finish desired as is used in making the cavity preparation for the same restoration. The following steps may be taken:

1. First, all margins are flushed by the use of medium coarse grit sandpaper discs. Special attention is given the cavosurface angles of the lingual and buccal proximal surfaces of Class II restorations (Fig. 2).

2. It may be necessary to use several discs in carrying out this step of the technique, as the perimeter of the sandpaper does the major part of the work.

3. In the event of a deficit of amalgam at any point on the occlusal margin, small carborundum or diamond points will be helpful in reaccomodating the margin of enamel and amalgam.

4. Any gross roughness on the occlusal surface is reduced with the aid of dull round plug finishing burs (Fig. 3).

5. The final smoothness is gained through the application of a midget rubber sulci disc operated at the maximum speed of the dental engine (Fig. 4). This application must be judicious to safeguard against the possibility of overheating the tooth. To promote the efficiency and long life of the rubber sulci discs, midget headed mandrels must be used concomitantly (Fig. 4).

6. The use of pumice and rouge impregnated rubber wheels is discouraged for fear of dangerously overheating the tooth, resulting in insult to the pulpal tissue and the possibility of "frosting" of the amalgam surfaces.

Final Polish

There are innumerable effective polishing agents. The following simple routine, however, has been found successful:

1. First apply medium coarse grit pumice with a webbed rubber cup.

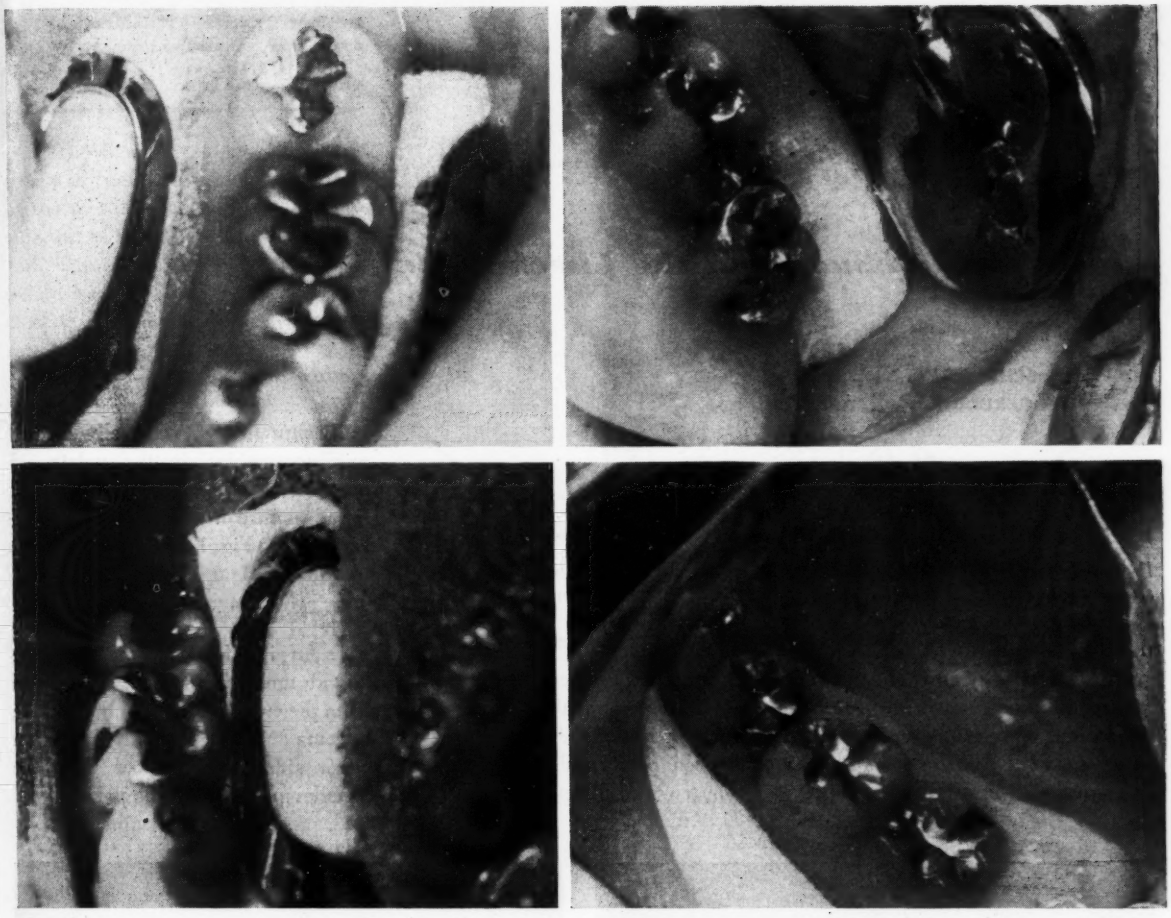
2. Follow with precipated chalk or tin oxide using the same instrument.

3. Separate handpieces are used for the polishing in order to conserve the precision action of those used for cavity preparation.

4. The procedure is concluded by accentuating the grooves with a small round burnisher (Fig. 5 and 6).

Summary

1. The routine finishing and



7, 8, 9, *and* **10.** *Completed restorations in the mouth.*

polishing of all silver alloy restorations is advocated (Figs. 7, 8, 9, and 10).

2. The advantages of a polishing procedure have been presented and an answer given to the fallacious argument in favor of neglect of the procedure with its deleterious results.

3. Some of the more common causes of failure to maintain a polish on amalgam restorations have been explained and in conclusion a simple, effective technique for the proper completion of amalgam restorations has been described.

307 *Graystone Building.*

Announcement of a Meeting in Memory of Leo Winter to be Held January 25, 1950

On July 6, 1948 New York University College of Dentistry and the entire dental profession suffered a tremendous loss: Professor Leo Winter, Head of the Department of Oral Surgery and Director of the Postgraduate Division of the College of Dentistry of New York University and Chief of Dental Service of Bellevue Hospital, died.

In memory of one of the foremost oral surgeons of our times, the Leo Winter Memorial Committee of the New York University Dental School Alumni Association has arranged a meeting on Wednesday, January 25, 1950 at 8:30 P.M. at the New York University Dental School, 209 East 23rd Street, New York City. Doctor Maurice J. Hickey, Associate Dean of the Faculty of Medicine, School of Dentistry, Columbia University will be the essayist for the evening. He will speak on the present and future status of oral surgery. Doctor Harold O. Voorhis, Vice-Chancellor of New York University will present the eulogy.

All members of the dental and allied professions are invited.

PALATAL REPAIR

by Gaining Tissue from the Cheek Lining

JOSEPH E. SCHAEFER, M.D., D.D.S.
and RALPH C. RUDDER, M.D., D.D.S.

DIGEST

In the case discussed here, three previous attempts had been made to repair a soft tissue defect of the palate. All attempts proved unsuccessful until the method of gaining tissue from the cheek lining which made it possible to avoid the tension at the midline sutured points which had caused the difficulty, was used.

History

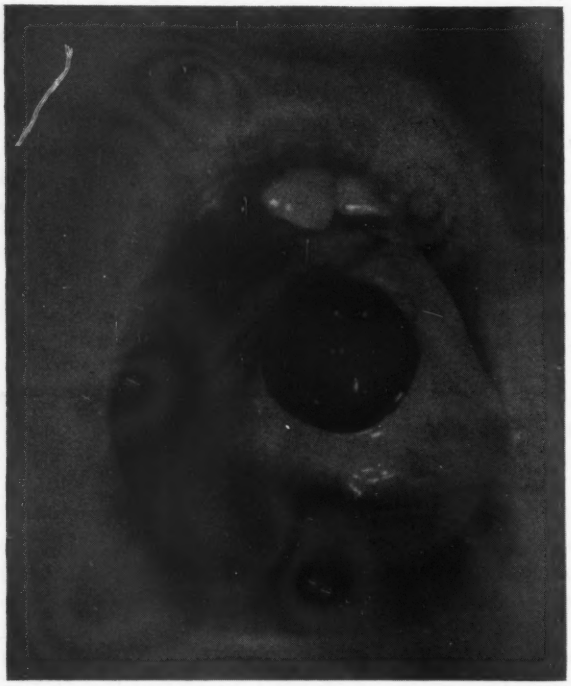
A well-developed, well-nourished young man, aged 20, presented himself for examination with the complaint of an opening in the palate.

Past History—1. A cleft palate operation had been carried out at the age of eighteen months. 2. Three subsequent operations for palatal closure had been performed at the ages of seven, ten, and fifteen years.

Examination—A centrally located midline opening in the palate, 35 centimeters in diameter, of a soft tissue nature was revealed by examination (Fig. 1).

Surgical Technique

1. An incision was made in the buccal mucosa extending backward from the cuspid tooth and beyond the retromolar area. The soft tissues on either side were elevated from the hamular process and the palate.



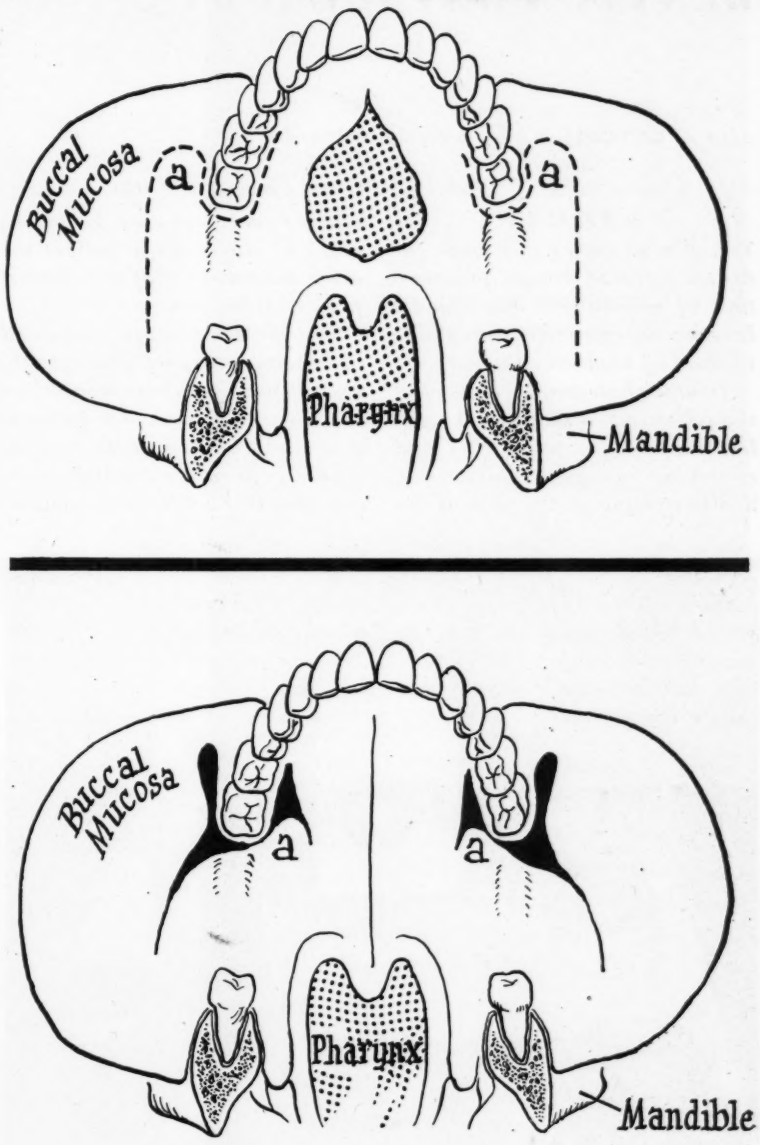
1. ***Photograph showing a large defect of the palate measuring 35 centimeters in diameter with insufficient soft tissue present to close the defect.***
2. ***Final result following palatal repair by gaining tissue from the cheek lining (scheme of operation after Blair).***

3. ***Diagrammatic scheme showing method of gaining tissue from cheek to close palate (after Blair).***

2. The hamular process on either side was fractured to relieve tension of the tensor palati and levator musculature of the soft palate.

3. The edges of the defect in the palate were split and freshened. The elevation of the mucoperiosteum and soft tissues were sufficient enough to allow for midline coaptation without tension.

4. The nasal side of the palatal defect was sutured with equistine along its entire length, a single deep biting catgut tension suture was placed through the bulk of the palatal tissue, and one-way mattress sutures were used to complete the oral mucosal closure.



Summary

1. Previous failures at surgical repair in this case were unquestionably due to tension at the midline sutured points. This difficulty was overcome (1) by extracting the malposed and carious posterior teeth, (2) allowing enough time for complete healing of the sockets, and (3) by gaining the additional flap tissue that once overlay both the alveolus and palate.

2. Enough tissue gain was made so that suturing in the midline could be accomplished without tension or subsequent slough (Fig. 2).

804 *West 79th Street.*
25 *East Washington Street.*

Announcement of Books Received

AN ATLAS OF DENTAL HISTOLOGY, by Edgar B. Manley, M.Ss., B.D.S., and Edward B. Brain, F.I.B.P., F.R.P.S., Springfield, Illinois, Charles C Thomas, 1947.

PHOTOGRAPHIC AIDS TO CLINICAL DENTAL PRACTICE, by James M. Dyce, L.D.S. (Glas.) L.R.C.S. (Edin.) D.D.S., First Edition, New York, Staples Press Incorporated, 1948. Price 50/.

BIOCHEMISTRY OF THE TEETH, by Henry M. Leicester, Ph.D., St. Louis, The C. V. Mosby Company, 1949. Price $5.00.

DENTISTRY IN PUBLIC HEALTH, edited by Walter J. Pelton, B.S., D.D.S., M.S.P.H., and Jacob M. Wisan, D.D.S., M.S.P.H., Philadelphia and London, W. B. Saunders Company, 1949.

DENTAL PHOTOGRAPHY

JACK F. CATHCART, D.D.S., Berkeley, California

DIGEST

The dentist has many uses for dental pictures. Visual presentation of any subject has rapidly become an extremely acceptable method of modern educators.

Dental photography is ideal in the following situations: (1) giving clinics, (2) preserving and recording unusual cases, (3) demonstrating to the patient the type of reconstruction he needs, and (4) showing the patient the exact treatment that the dentist proposes for him.

Not all dentists are interested in becoming expert photographers but many of them would like to take excellent dental pictures if it could be done with a minimum of effort. It is for these dentists that this article is presented.

1. ***(I) A single lens reflex 35-millimeter camera. (II) Supplementary wide angle lens with built-on extension attachment for individual tooth pictures. The picture is twice the actual size of the tooth and inlay. (III and IV) Attachment rings for extension tubes. (V, VI, and VII) Extension tubes that allow regular lens to be extended from the camera, thus enlarging the field by bringing the subject closer to the camera but still keeping it in focus. Used instead of portrait lens.***

Necessary Equipment

Three pieces of equipment are necessary in order to take successful dental pictures:

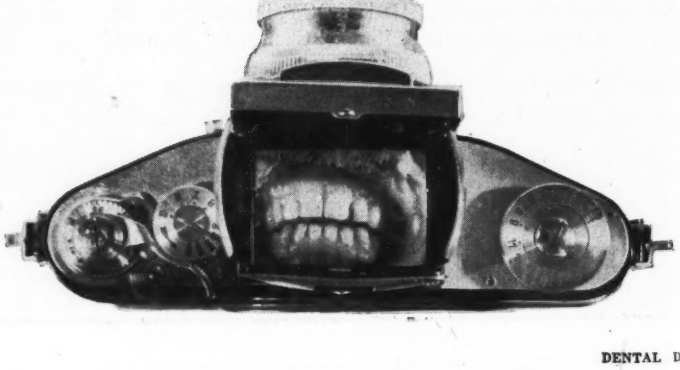
1. A good camera (single lens, reflex type).
2. A firm mobile holder for the camera.
3. A proper lighting unit for color film.

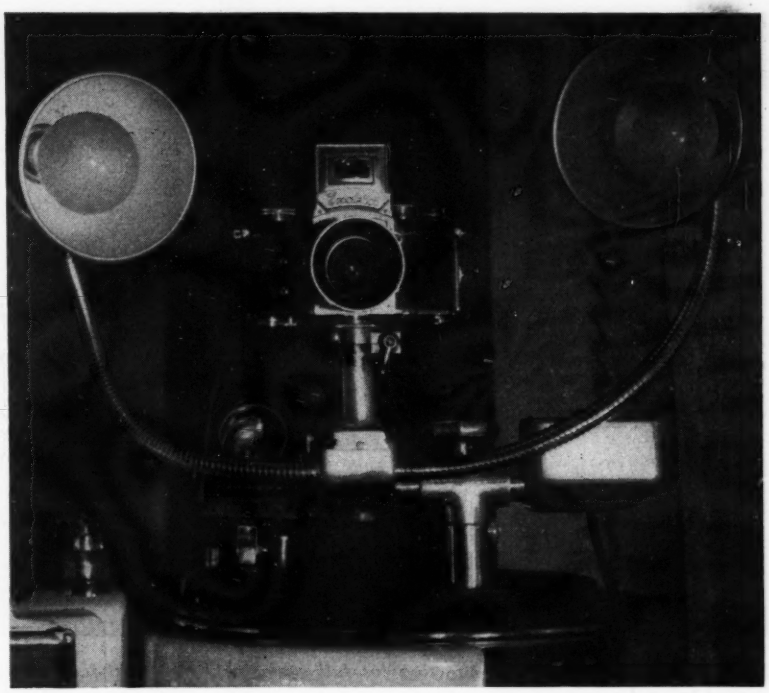
After this equipment has been assembled and tested by an expert, if the dentist will follow the rules which have been predetermined for (1) lens openings for picture sizes, and (2) time of exposure, he is almost sure to obtain uniformly satisfactory pictures.

Cost of Equipment is Justified—Photographic equipment of good quality is expensive but the convenience, the reliability, and the results justify the price. There are many cameras on the market which are not prohibitive in cost with which a proficient operator can take excellent dental pictures.

A Thirty-five-Millimeter Camera Recommended—For the average dentist who wants satisfactory results but does not wish to become involved in the maze of photographic possibili-

2. ***Showing how the subject is focused exactly on the mirror of the single lens reflex camera regardless of the kind of lens or attachment used.***





3. ***The camera stand with its lighting unit of two Number 1 photo floodlights and the 150-watt projector for the spotlight directly on the mouth. This unit gives a Weston reading of 200 or allows a stop of .8 at twenty-five seconds' exposure with Kodachrome A film.***

ties, a 35-millimeter camera of the single lens reflex type is recommended.

Wide Price Range—These cameras range in price from $100 to $500 but with them it is possible to see the subject in a mirror before the picture is taken and thus focus it exactly as wished, regardless of the type of lens used. The type of lens with attachments, however, is an important factor for accurate dental pictures.

Efficient Mechanism

1. With the 35-millimeter camera of the single lens reflex type it will be unnecessary to correct for parallax or ground glass focusing.

2. When the picture is finally taken alinement and focus are assured.

3. There will be no compensations necessary when portrait lens or other accessories are added to the lens; that is, extension tubes to take extreme close-ups.

4. What is seen in the mirror is the picture that results when the button is pressed if two factors are correct: (1) predetermined exposure time and (2) stops.

The Use of Kodachrome Film—If 35-millimeter, type A (artificial light) Kodachrome film is used, finished mounted pictures will be produced because the purchase price of the film includes the processing of the film by the Eastman Kodak Company. Large black and white prints can be made from these transparencies. The pictures in this article were made from Kodachrome slides.

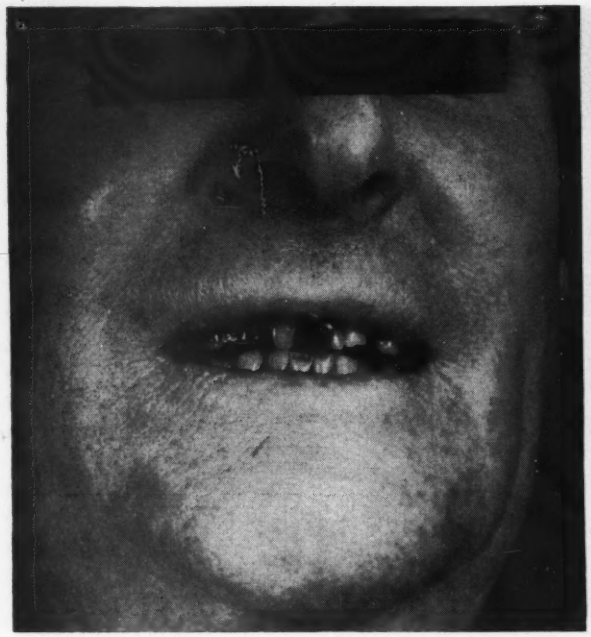
The Importance of Proper Light—The stand which holds the camera and the lighting unit should be portable and easy to place in position. Several makes of stands on the market, including one unit on gliders, can be moved to the side and do not have to be placed on the bracket table.

Method for Use of Light—1. The light by which most dental pictures are taken should be the same for each picture in the series and should be artificial light.

2. The pictures are taken extremely close to the patient and, therefore, the heat of the lights must be considered. Two Number 1 photofloods, supplemented by a 150-watt, 35-millimeter projector has been found to permit a picture to be taken at a twenty-fifth of a second. This speed makes it unnecessary for the patient to have to sit too quietly for a long period of time.

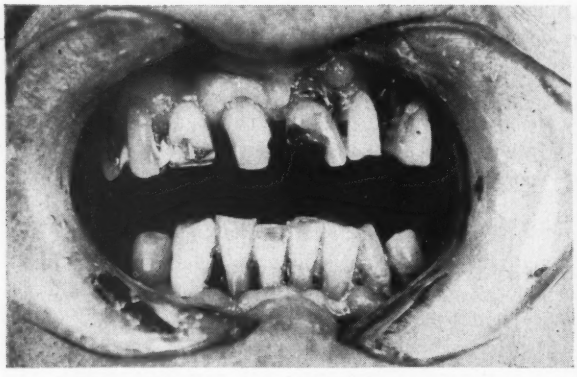
3. An f8 stop allows for a depth of focus from the centrals back to the bicuspid area. This time and lighting also gives true color rendition on Kodachrome A.

4. ***The patient holding plastic retractors with the camera in position on the bracket table.***

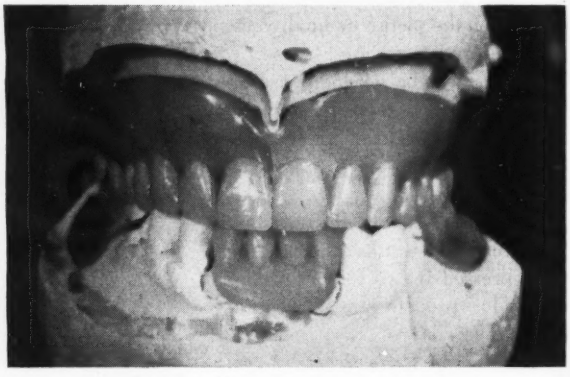


5. *Full face picture before extraction for full upper and partial lower dentures.*

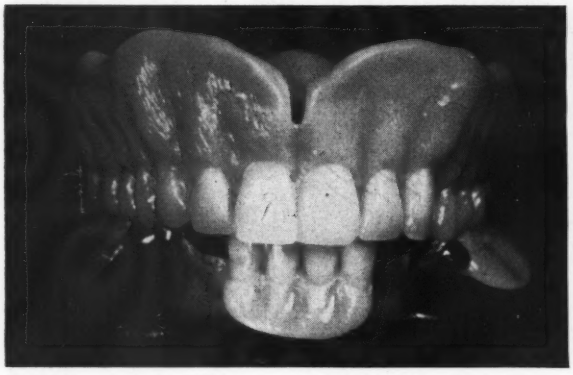
6. *Full face picture taken one week after extraction with full upper and partial lower dentures placed.*



7. *"Before" picture is taken with lens on extension tube giving close-up of the mouth and teeth only.*

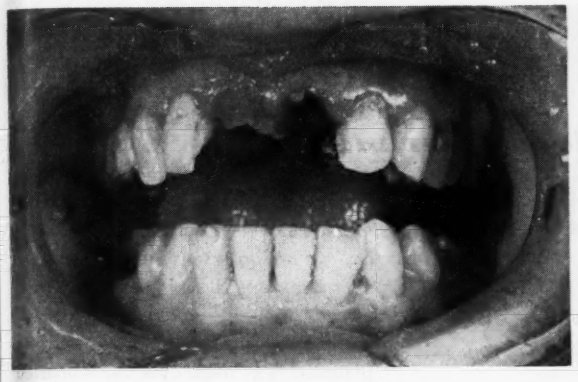


8. *Model picture of full upper and partial lower dentures set up in wax on articulator ready for try-in.*

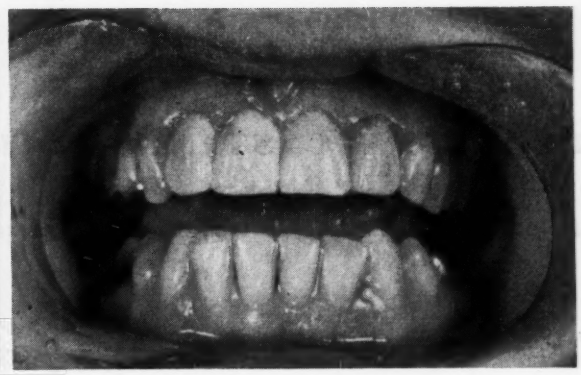


9. *Finished full upper and partial lower dentures taken with lens on extension tube.*

10. *Picture taken one week after extraction with dentures in place. Close-up lens on extension tube.*



11. *Close-up picture taken just after extraction of the central incisor which was the bridge abutment for the other central. The picture was taken at 7 A.M.*



12. *Picture taken at 4 P.M. the same day as the extraction picture, showing 4-unit all-acrylic bridge made by the direct-indirect immediate technique. Lens on extension tube is used for close-up view.*

Conclusion

When all the factors discussed herein have been considered and tried and the results have proved to be satisfactory, dental photography will become a routine procedure for the dentist.

701 *American Trust Building.*

Multiple Myeloma

Investigation of 61 cases of multiple myeloma in 44 men and 17 women between the ages of 31 and 76, the average age being 58 years, was undertaken with the following results:

1. Sixty patients showed a pronounced carious condition or a complete absence of teeth, suggesting that the same process which so commonly leads to skeletal osteoporosis also affects the teeth.

2. Forty-one patients had bone pain and as many patients had loss of weight.

3. Thirty-seven patients had gastrointestinal symptoms and 31 had low grade, remittent fever.

4. Pallor was present in 28 cases.

5. Bleeding occurred in 24 patients.

6. Disorders of the nervous system were observed in 21 patients, root cord compression being the commonest neurologic manifestation.

7. Bone tumors were present in 13 cases.

8. The incidence of Bence Jones proteinuria was 28.

9. Elevated total plasma protein occurred in 31 cases.

10. Hyperglobulinemia was present in 41 cases. Because of a lowered albumin level hyperglobulinemia may be present without hyperproteinemia.

Electrophoretic Studies

1. In fifteen out of the 29 cases studied, the electrophoretic patterns were similar to those previously reported.

2. In 6 cases there was a tall, narrow, abnormal peak migrating more slowly than gamma globulin, a type of pattern which has not been previously reported.

3. In 8 cases large abnormal peaks were absent, but there were significant small abnormalities; in these 8 cases the incidence of Bence Jones proteinuria was 87.5 per cent, suggesting that in many cases in which large abnormal peaks are absent, small abnormalities are due to Bence Jones protein in the plasma.

The high incidence of Bence Jones proteinuria in this group may result from the absence in the plasma of a high molecular weight protein capable of forming complexes with Bence Jones protein.

Improved Diagnosis

1. The accuracy and promptness of the diagnosis of multiple myeloma may be increased by (1) careful electrophoretic studies, (2) by greater attention to the occurrence of rouleaux formation of the red blood cells in the peripheral blood, and (3) to the bright blue coloration of the Wright's stained blood smear.

2. Any case of unexplained anemia should be given the benefit of a sternal aspiration and/or sternal biopsy.

3. Energetic search should be made for Bence Jones protein.

4. Serum calcium level, inorganic phosphorus, alkaline and acid phosphatase should be determined.

5. Careful analysis of all roentgenographic osteolytic porcesses should be made, and more attention should be paid to the occurrence of osteoporosis.

From Current Medical Literature, *Journal of the American Medical Association* **140**:913 (July 9) 1949.

PLATINUM CASTINGS *to Close Tolerance for Reinforcing Under Porcelain*

FRED R. FELCHER, D.D.S., Chicago, Illinois

DIGEST

Porcelain jacket crowns are as successful as the foundation preparations over which they are applied. Lecturers and clinicians usually demonstrate on perfect appearing preparations which is misleading because it is not often that a perfect preparation is made.

By a perfect preparation is meant one with the following characteristics: (1) completely denuded of enamel, (2) well formed, (3) of proper length to protect the porcelain against directional forces, and (4) a well-defined shoulder complete around the gingival of the tooth, slightly under the free gum margin.

After long experimentation the author of this article has evolved a casting technique for various types of reinforcements and adapters which is described in detail herein.

Support of Porcelain Necessary to Prevent Breakage

A tooth that is to support a porcelain jacket crown may in many instances be broken down without sufficient dentine left to support the jacket properly. In these cases some means must be used of building up a support for the porcelain jacket.

Usual Causes of Breakage—1. Insufficient mesial or distal support will cause a jacket to fracture in a half-moon or in a vertical direction.

2. Instead of being absorbed by the tooth as in the case of a tooth covered with enamel, attritional forces *pass through the porcelain.* This is the usual cause of breakage (Figs. 1A and 1B).

Stresses on Porcelain Should be Avoided—A good rule is to make sure that all stresses are thrown on the tooth and not on the porcelain. If there are no errors in cementation, or accidents, when teeth with insufficient dentine are encountered, this is a good rule.

Gold Cores or Thimbles for Porcelain Support

Having proved the importance of supporting porcelain against stress gold cores were cast to fit over teeth with wide shoulder preparations, dividing the shoulder with the gold and the porcelain (Fig. 1C). From these experiments with cores stemmed the so-called thimble crown and the thimble attachments in which missing teeth were replaced with two slotted jackets over gold core castings soldered together.[1]

The Use of Reinforced Platinum Iridium Sheet

Despite the difficulties of manipulation, a method of reinforcing under porcelain was evolved which was used successfully in many cases.

Method—1. A sheet of .002 iridio-platinum (10 per cent) or ruthenium platinum (5 per cent) was used.

2. This was annealed, burnished, and swaged over a platinum matrix. It was then invested in a high temperature refractory.

3. Reinforcing was accomplished with an oxygen gas torch. A welding platinum was used over the so-called adapter. After the usual trimming porcelain was baked to this.

Different Adapters—Where there was a tendency for labial protrusion, open face adapters were designed, and where the bite was close, metal occlusals were made. The basic theory of the technique, however, was the support of porcelain jacket crowns.[2,3]

Modified Preparations Allowing for Shoulderless Linguals

The opportunity to conserve teeth and pulps by the use of the shoulderless lingual preparation for the reinforcements is of great value. Many reinforced shoulderless jacket crowns have been used with (A) the finish line well adapted to the root, and (B) a shoulder in the metal. These adapters have also been used for small bridge replacements.

The Casting of Various Types of Reinforcements

The following technique is based on the principle known in ceramics as an enamelling process. A glasslike material (enamel) is baked to rigid metals such as iron or steel to a good bond. As long as the metal remains rigid the enamel remains in position without chipping. Common examples are enamelled table tops and refrigerators. The same principle can be applied to reinforcing under porcelain where the supporting metal will not yield.

---

[1] Felcher, Fred R.: Dental Ceramics: A Treatise on the Technique of Porcelain Manipulation, Dental Cosmos, Volume **43** (April, May, June, July) 1921.

[2] _____: Platinum Reinforced Porcelain Restorations. DENTAL DIGEST **43**:24-27 (January) 1937.

[3] _____: Shoulderless Lingual Reinforced Jacket Crowns, DENTAL DIGEST **45**:226-229 (June) 1939.

Welding Material Difficult to Manipulate—In the technique using the reinforced adapter, welding metal was used instead of 1400° Centigrade (2552° Fahrenheit) or 1600° Centigrade (2912° Fahrenheit) platinum solder. Welding metal does not flow readily and at a critical temperature will flatten to the sheet. The metal was piled on but the temperature range of the sheet and the welding metal were close enough to cause the metal to burn up and in reinforcing the torch had to be used adeptly.

Platinum Solders Not Indicated—Where porcelain was to be applied platinum solders were not indicated because of the tendency of the palladium in the solder to occlude hydrogen which in turn caused either peeling of the porcelain or gassing.

Casting of Platinum in Jewelry Manufacture—It was believed that if it were possible to cast platinum or iridium, or even platinum ruthenium, a technique could be devised that would be more extensive in application and therefore more widely used.

Original Method of Casting Platinum—Manufacturing jewelers first cast platinum rings by the following method: 1. A wax ring was mounted on a sprue former.

2. A paper collar was made around the sprue former and filled with a high temperature investment.

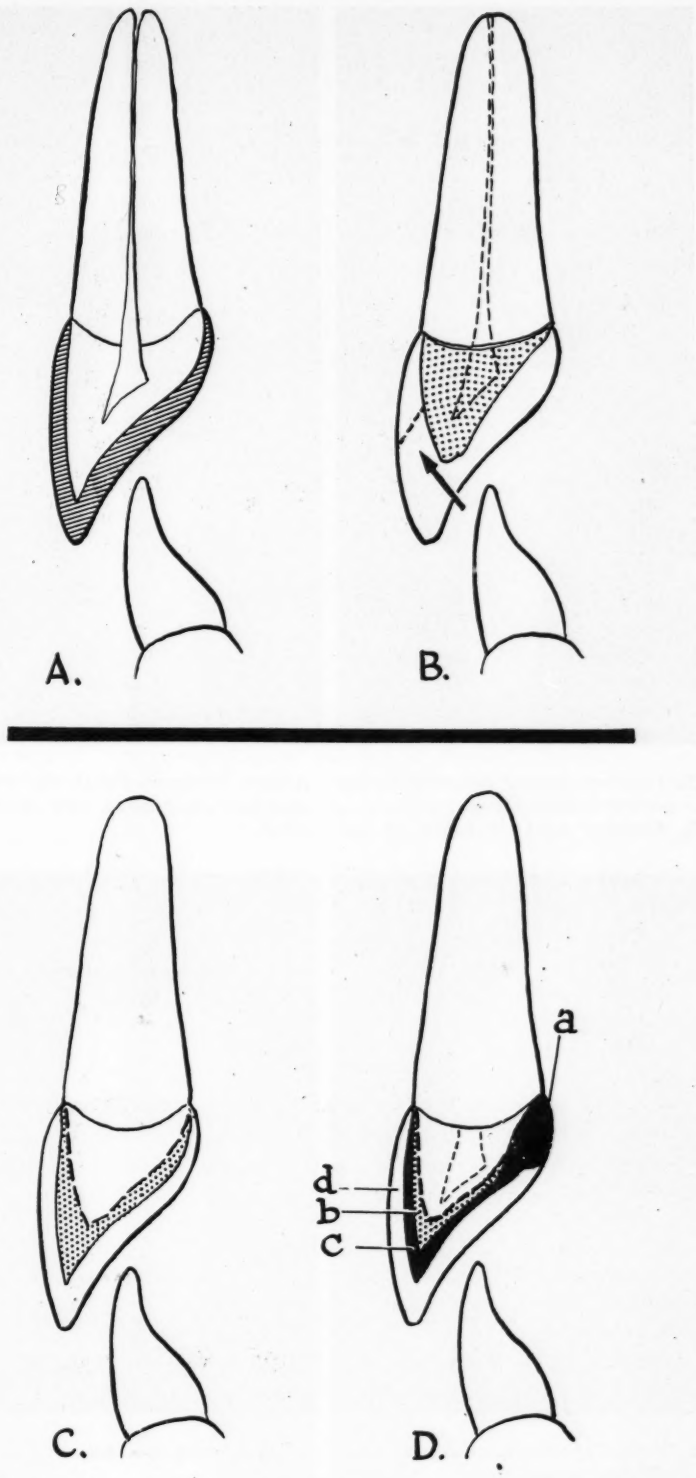
3. This in turn was placed in a drying oven at a temperature low enough not to melt the wax and allowed to remain over night.

4. The paper was then removed, the casting ring put in place, filled with investment, and finally burned out and cast.

(While it is understood that the casting contraction of platinum is about 2 per cent, in commercial castings an oversized pattern, or sizing, takes care of the problem.)

Other Casting Methods Adopted—At present the general procedure for ring casting is the following: 1. A slow setting platinum investment, mixed extremely thick at first, then with a mechanical mixer similar to a household mixer is placed under vacuum, the ring poured, then again vacuumed.

2. It is allowed to set, then placed



1. ***(A) Outline showing normal dentine-enamel relation. (B) Outline showing how unsupported porcelain causes half-moon breaks. (C) Outline showing how metal core eliminates stresses through porcelain. (D) Outline showing iridiam platinum principle of reinforcing. (a) Finish line at lingual gingival, shoulder in metal. (b) Modeling compound, later replaced by cement, to conserve metal. (c) General outline of iridium platinum casting. (d) Porcelain baked to metal.***

2. ***Platinum casting restoring section to prevent straight break.***
3. ***Finished porcelain baked on cast iridium platinum. Finish line lingual, porcelain in contact with tooth on labial.***

4. ***Method of treating small teeth with shoulderless preparations.***
5. ***Reinforced bicuspid.***

in a warming oven at a low temperature over night, gradually heated for a number of hours, and finally cast.

(Shrinkage is allowed for.)

Care Required in the Use of Platinum Metals for Casting—Platinum metals have properties that present difficulties: 1. When melted under unfavorable conditions these metals become quite brittle.

2. An improper flame or investment can give trouble.

3. Ten per cent iridium platinum melts at about 3500° Fahrenheit. There are not many refractories capable of withstanding the temperature for casting platinum or the pressure of the casting machine when casting.

4. Silicates, borates, and carbonates tend to cause brittleness when in the refractory compound. The high degree of shrinkage of the metal, even under favorable circumstances, adds to the problem.

A Method for Compensating for Casting Contraction

In some cases a wax pattern can be made over a matrix of tin to compensate for contraction, but this method is not reliable. Extended experience with ceramic materials, dental porcelains, and refractories has been helpful in developing a refractory which is (1) capable of withstanding the casting temperature of the iridioplatinum without breaking down, and (2) which has no detrimental effect on the platinum. The investing material has a tendency to expand under varying thermal conditions. As a result, iridioplatinum or a similar alloy of platinum, without expensive extra equipment, can now be cast as easily and in about the same length of time as that required for a gold inlay.

Equipment Required for This Casting Technique—The following materials are used: 1. Centrifugal casting machine. 2. Crucible for melting and casting the platinum. 3. A burn-out oven capable of attaining a temperature of 1800 or 1900° Fahrenheit. 4. An oxygen-gas torch. 5. Goggles. 6. Investing material.

Various Preparations and Adapters—By the use of this technique preparations for jacket crowns can be simplified. In order to conserve the tooth, a finish line lingual is made with the usual labial shoulder and a groove in the proximal. To reinforce porcelain on an insufficient preparation the usual platinum matrix is made to which porcelain is later

6. ***Sectional casting showing close tolerance.***

baked and removed. Over a matrix a wax pattern is made, invested, and finally cast. Bake the porcelain (Figs. 2 and 3).

Correction of Stresses—After many years of service the change in the bite of a jacket crown frequently causes stresses other than that to which the crown was originally subjected. In this case a reinforced jacket is indicated.

Band Adapter—Figure 4 shows a band adapter where complete shoulders are not desired. (1) The small peg lateral where a complete or partial shoulder cannot be made can have the finish line completely around the tooth and (2) where the filling of a space is needed, a platinum casting flared to support the porcelain is made. This is possible because the porcelain is baked directly to the casting.

Figure 5 shows a bicuspid with a finish line lingual and a buccal shoulder. The finish line linguals have been satisfactory and are recommended.

A Grooved Proximal—Another procedure is that of making a groove in the proximal with the tapered effect narrower toward the gingival. When used as a bridge abutment torque force is prevented while in this case, as well as for a single jacket crown, a joining or dividing is allowed for the metal and porcelain (Fig. 1Da).

Design for a Bridge Abutment

As the metal may be brought to view on the lingual for close bites, it offers a satisfactory design for bridge abutments: 1. The wax is carved with the lingual toward the incisal, bringing the proximals to contact.

2. A groove is placed on each side of these contacts in order to accomodate the porcelain later in a lock from side to side.

3. On the labial, near the shoulder, a strap is built which is later covered in the heavier part of the porcelain below the shoulder and prevents a tendency of the metal to spread when mesial or distal force is applied to the abutment.

Advantages—This type of crown is (1) strong, (2) has no metal showing, (3) is superior to a full veneer crown, and (4) requires less metal, a factor in cost (Fig. 10).

Pontics—1. In the case of a bridge abutment the metal may extend enough to come in contact with the pontic frame which is also cast of iridioplatinum. 2. For the replacement of missing teeth there are many types available, depending on the needs of the case. 3. A porcelain bridge, in which the showing of metal is unnecessary, offers a means of esthetics in the restoration. 4. Characterization is often used for close harmony with surrounding teeth.

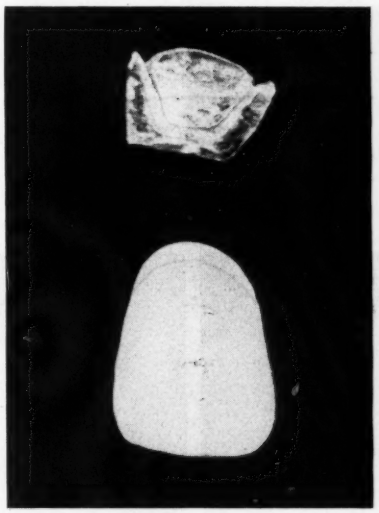
Platinum Metals are Tissue Tolerant—Unlike gold saddles to which plaques form, platinum metals are tissue tolerant and may be used as saddles coming in contact with tissue. For that reason, modified ceramicast denture teeth are suggested for replacement of missing teeth in a porcelain bridge. These teeth closely resemble natural teeth in form and translucency and may be ground and polished.

Advantages—1. Ceramicast denture teeth can be built up to any desired form by the use of an add-on porcelain matched in coefficient with the tooth. Any other porcelain used on this tooth will cause checking.

2. The design of this tooth presents a hook step lock close enough to the incisal to eliminate excessive leverage. A channel connects with the hook step on each side.

3. Both the channels and the hook steps angle toward a common center lingually, allowing for additional porcelain at the lingual for strength.

Technique—1. Close the hook step with modeling compound. 2. With a knife edge stone cut a line from the hook toward the gingival, widening



7. ***Casting for ceramicast tooth.***

8. ***Lingual view of pontic casting in place.***

9. ***Lingual view of abutments and pontic castings after assembly with welding metal.***

10. ***Casting in position on model.***

the channel somewhat toward the gingival. 3. A slight boxing may be made at the linguogingival. It should now be possible to build a wax pontic over that portion of the tooth that will proximate the tissue and have it extend incisally in the channel. 4. Invest and cast. This casting can be later attached to the abutment with welding metal. It is preferred to platinum solders, particularly if baked porcelain is to come in close contact with it (Figs. 5, 7, 8, 9, 10, 11, and 12).

Advantages of Grooving—For a simple wing bridge the grooving in the proximal of the preparation is of advantage to prevent torque force. For some cases a lug or rest on an adjacent tooth may be used. This lug may be cast with the pontic.

Strap Support—Either a so-called strap across the labial or the abutment tooth or a thin amount of platinum iridium covering the front is desirable. The strap extends across the labial slightly below the shoulder just enough to be placed under the thicker portion of porcelain near the gingival. In either case, especially where the lingual is thin, these will prevent spreading of the metal under a mesial or distal force which would cause the porcelain to break. Leave about 1 millimeter to 1½ millimeters space between the top of the metal and the natural labial shoulder of the tooth.

A Full Metal Crown—If a full metal crown with a porcelain front baked into it as a veneer is used it is advisable to bring the platinum to view in order to protect the porcelain at the incisal. This may be objectionable from the esthetic point of view. The design shown in the bridge abutments described is preferred.

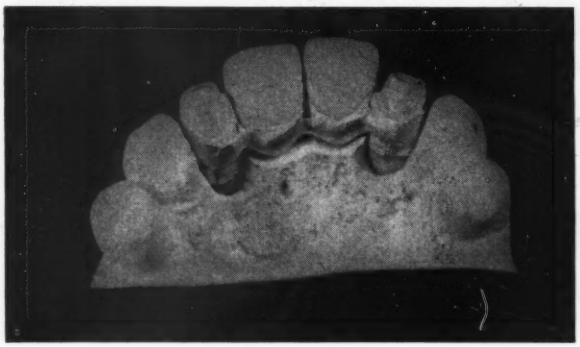
11. ***Lingual view showing pontic teeth in position before baking on abutments.***

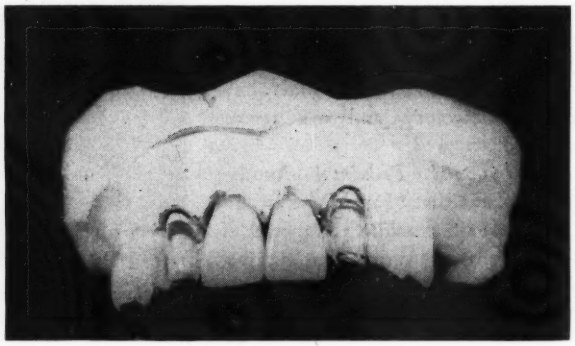
12. ***Labial view.***

Conserving Metal

The following method is useful for conserving metal without sacrificing strength:

1. To build a reinforcement for a jacket crown on a broken-down preparation metal must be used to prevent directional forces through the porcelain. Instead of building entirely of metal, part of the broken area is built up on the die with modeling compound (Fig. 1Db).





2. Over the compound a platinum foil matrix is built.

3. Swage the matrix.

4. Wax up as needed.

5. Invest and cast.

6. Later the modeling compound is replaced with cement and the cement covered with the platinum casting.

7. When porcelain is to come in contact with a tooth, as in a shoulder fit, the waxing must be done on a platinum matrix. The matrix should be well adapted so that it will not come off except for final baking. The matrix is lubricated to prevent the wax from sticking.

Spruing and Casting

Spruing is done with a 12-gauge, or heavier, sprue. Additional feeder sprues of thin wax may be needed. Iridium platinum is melted at a high temperature and cools rapidly and must be handled differently from jewelry castings.

1. All the instruments to be used must be clean.

2. Line the ring with asbestos paper.

3. Mix the investment according to directions.

4. Vibrate over the pattern which has been treated with a surface tension remover. Vibrate the investment gently over the pattern, place the ring on the investment, and vibrate the ring full.

5. Setting will take place within twenty minutes to an hour. The ring may then be placed in a warm temperature.

6. After drying out, burn out in the furnace to 1600 degrees, higher, if preferred, and cast as quickly as possible.

7. Allow to bench cool. If any investment adheres to the casting, an immersion for a short period in hydrofluoric acid will remove it.

8. Finish, replace over the die and the matrix.

9. The matrix and the casting are removed and burned out in the porcelain furnace at a temperature high enough to destroy any foreign matter.

Final Building with Porcelain

1. Metal shadows are blocked out with the proper blend of opaque color and finished with porcelain.

2. Any porcelain may be used provided the opaque and the porcelain are in balance.

3. Each manufacturer of dental porcelain has his own formulas and processes; minerals are not the same in physical properties as basic metals.

4. Feldspars, flints, or clays may respond to a similar chemical formula yet have different physical characteristics.

Conclusions

1. The author uses a porcelain of his own composition and make. Since the opaque porcelain bodies, concentrates, add-ons, and auxiliaries are related, considerable success has been attained in baking over metal. It is a strong body with a high modulus of rupture and gives a highly natural effect.

2. Exposed metal is highly polished before cementing and after occlusion is established.

7932 *South Chicago Avenue.*

Antihistaminic Drugs in the Common Cold

STATIONS FOR the treatment of "colds" were established at a United States Naval Compound.

Drugs Included

Tripelennamine (pyribenzamine), Methapyrilene (thenylene and histadyl), pyranisamine (neoantergan) and diphenhydramine (benadryl) were included in the experiment. Combination of codeine sulfate with papaverine hydrochloride was chosen as the control medication.

Statistics

A total of 572 patients were treated. A cold was considered to have been aborted or cured when all signs and symptoms disappeared within twenty-four hours of the beginning of treatment.

1. All symptoms were aborted in 19 of 21 patients in whom treatment with antihistaminic drugs was begun within the first hour after the onset of symptoms and in 48 of 55 patients treated within two hours of onset.

2. One hundred and sixteen of 156 patients who received treatment within six hours and 165 of 234 patients who received treatment within twelve hours of onset were also cured.

Comment

1. The effectiveness of the treatment is inversely proportional to the lapse of time following the onset of symptoms before treatment is begun. Statistics from parallel controls treated with codeine sulfate and papaverine hydrochloride were much less favorable.

2. Two or three doses of the antihistaminic drugs at four-hour intervals are adequate to effect an abortion of symptoms in 90 per cent of the cases where treatment is instituted within a few hours after onset.

Conclusion

The author believes that the incidence of the common cold will be reduced when the antihistaminic drugs eliminate the sneezing, coughing, and profuse nasal discharge which now is left invisibly on door knobs, faucet handles and hand rails, and in the air.

From Current Medical Literature, *Journal of the American Medical Association* **141**:486 (October 15) 1949.

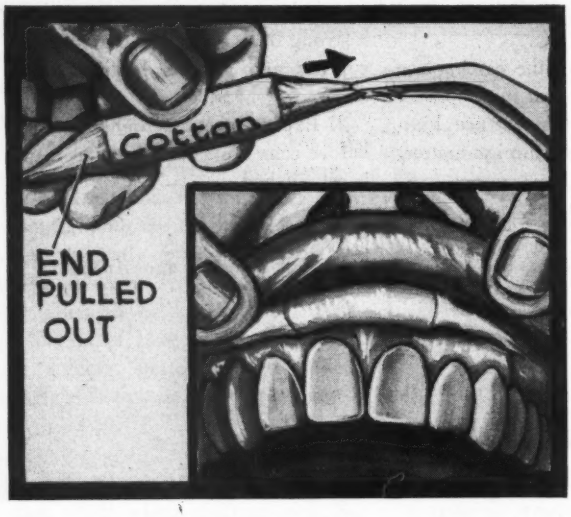
1

Clinical and Laborator

Painless Palatal Injections

S. Robert Sadwin, D.D.S.,
Woonsocket, R.I.

1. Hold a cotton pellet that has been sprayed with ethyl chloride directly and firmly over the point of the palate at which the needle is to be inserted. Hold the pellet in position under moderate pressure for about fifteen seconds, then inject.



2

Ease of Adaptation of Cotton Rolls

B. D. Lee, D.D.S.,
Ellijay, Georgia

2. When using a cotton roll in the anterior part of the mouth do not bend the roll to conform to the arch contour. Use cotton pliers to pull out each end one-quarter inch. Then grasp both ends and pull out one-half to three-quarters of an inch. The roll will contour easily and will cover more surface.

3

Use of Articulating Paper

S. S. Pollak, D.D.S., New York

3. To avoid getting the fingers smudged and to avoid having the paper blow off the tray, attach the articulating paper with a towel clamp to the patient's towel.

READERS *are Urged to Collect* $10.00

For every practical clinical or laboratory suggestion that is usable, DENTAL DIGEST will pay $10.00 on publication.

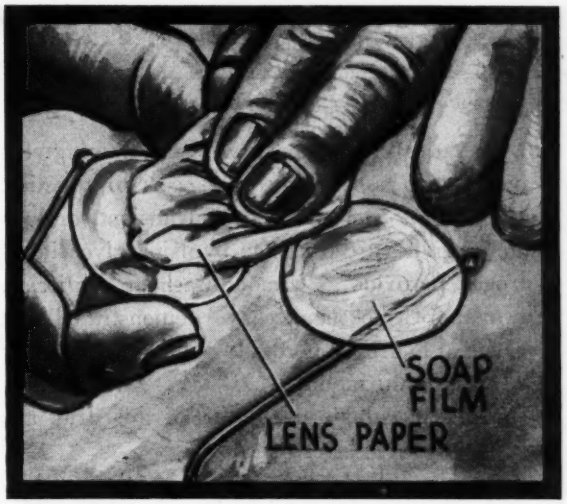
You do not have to write an article. Furnish us with rough drawings or sketches, from which we will make suitable illustrations; write a brief description of the technique involved; and jot down the advantages of the

SUGGESTIONS . . .

Prevention of Fogging of Eyeglasses and Mirrors

Walter C. Baldwin, D.D.S., Milton, Pa.

4. During operations where a surgical mask is worn, eyeglasses become fogged with condensed moisture from the breath. To eliminate this, clean the glasses in the method of choice, then rub soap or soap liquid in small amounts on the lenses. Polish *without* water with paper tissue. The thin film of soap remaining on the lenses will prevent fogging. The same procedure may be used on mouth mirrors.



4

Softening Inlay Wax

H. S. Susman, D.D.S., Omaha

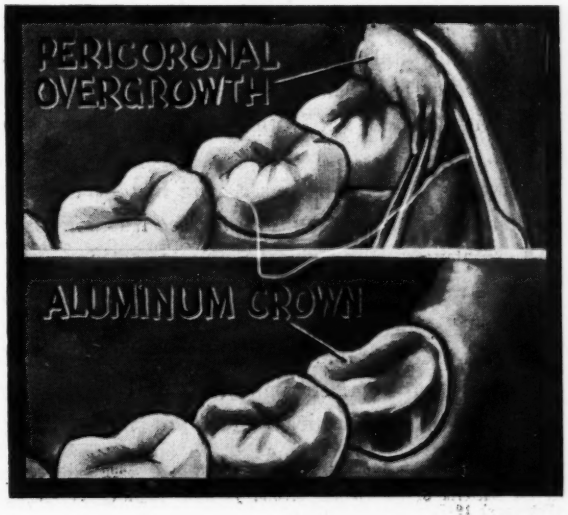
5. Put a piece of inlay wax in a perforated "tea maker" and place in warm water for a few seconds. Upon removal from the water, the wax will be soft and of the same consistency throughout.

5

A Simple Method of Freeing Lower Third Molars

Norman M. Ordene, D.D.S., and Jerome I. Feldman, D.D.S., Brooklyn

6. In a case of pericoronitis or tissue flap overgrowth distal to the lower third molar, the tooth may be brought into useful function after the elimination of infection. Under mandibular block anesthesia the tissue is incised and cut away to expose the entire molar. An aluminum crown is then fitted and festooned, filled with zinc oxide and eugenol paste, and fitted snugly around the coronal portion of the tooth. After several weeks when healing of the tissues has occurred the aluminum crown may be removed, leaving a clean, fully erupted tooth.



6

technique. This shouldn't take ten minutes of your time.

Turn to page 44 for a convenient form to use.

Send our ideas to: Clinical and Laboratory Suggestions Editor, DENTAL DIGEST, 708 Church Street, Evanston, Illinois.

The EDITOR'S Page

THE MANAGEMENT of low-grade chronic gingivitis is one of the less gratifying aspects of practice. Many patients who suffer from transient, or low-grade gingivitis are benefited by using glycerite of hydrogen peroxide as a mouthwash or dentifrice. Brown and Cruickshank[1] have demonstrated that glycerite of hydrogen peroxide reduced the number of bacteria in the mouth.

The pharmacologic properties of this drug are described by these investigators:

"Glycerite of hydrogen peroxide has the physical characteristics of glycerol. Its surface tension at 20°C is 65.6 dynes/cm. (water 72.25 dynes/cm.). It is slightly yellow in color. Its approximate pH is 6.0. It is miscible with water in all proportions. Its stability has been the subject of a separate study, in which it was shown by titration methods that samples left in clear bottles in and out of sunlight were stable for periods beyond 1 year. The properties of the individual ingredients merit brief mention.

"Glycerol would seem to be an ideal vehicle for an oral preparation. It has a pleasant taste and no ill effects follow its ingestion since it can be taken orally by humans in doses of 30 cc. 3 times daily for as long as 50 days. It is miscible with saliva of which it increases the flow. It seems, however, to line the oral mucosa with a film which serves to bring the antiseptic into close contact with the tissues. Its viscosity limits the rate of decomposition of the peroxide which as it decomposes renews the interface between the solution and the tissues prolonging the antiseptic action. As reported by Rodriquez glycerol has a protective action against the irritation of antiseptic substances, such as iodine.

"Hydrogen peroxide has a long history in both the art and science of dentistry. Since it is non-toxic and relatively non-selective in its action upon bacteria affecting Gram positive and Gram negative organisms and since as an oxidizing agent it possesses excellent deodorizing properties, it would seem to be an ideal substance for oral antisepsis. Although the mechanical effects of its foaming action are considered desirable for dental work, its relative instability in storage and its transient action in the presence of many catalysts mitigates against its use as an antiseptic. In glycerol the hydrogen peroxide derived from urea peroxide is more stable in vitro and decomposes less quickly in vivo and when in contact with oral tissues. Its use as a dentifrice and as a mouthwash (diluted with water 50%) for periods up to 23 months on 83 individuals both with normal mouths and with oral infections, has shown no cases of irritation or of 'hairy tongue.'"

Inflammation is an interference with circulation. In all inflammatory reactions Menkin has shown that there is severe cellular injury. In treating inflammation we must be certain that we do not add further insult to injured cells.

In treating gingivitis, Lyons[2] has recently warned that strenuous massage may be harmful to inflamed tissue:

"The resolution of gingival or periodontal inflammation and the restoration of normal circulatory function can be obtained only by the removal of causative disease influences, the correction of structural tissue changes and the establishment of proper function. Without these, good health cannot be induced or maintained. Circulatory stimulation can best be obtained and maintained by good function. *Massage is, at best, a poor substitute for good functional stimulation.* The current emphasis on massage and the widespread disregard of the essential feature of establishing good function in periodontal treatment programs should be viewed with considerable concern.

"The contention that massage is indicated to supply the stimulation which the gingivae are alleged to miss from our modern diet rests, in part, on the erroneous concept that the gingivae are scoured by food during mastication. What are the facts? *The normal contact relationships of adjoining teeth, the contours of their axial surfaces, the cingula of the incisors, the inclination of teeth in their alignments, and other anatomy details all function to protect the gingivae against scouring and pressure impaction of food in mastication.*"

[1]Brown, Ethan Allan, and Cruickshank, George A.: A Comparative Study of the Effects of Glycerite of Hydrogen Peroxide and of Hexylresorcinol on the Bacteria of the Normal Mouth, J. Dent. Research **26**: No. 1 (February) 1947.

[2]Lyons, Harry: Fiction and Facts in Periodontology: An Appraisal, J.A.D.A. **39**:515 (November) 1949.

MEDICINE and the Biologic Sciences

Prescription Writing

The Federal Food, Drug and Cosmetic Act is generally regarded as being concerned with the following questions: (1) accurate labeling, (2) prevention of adulteration, and (3) safety. On the basis of recent court decisions and interpretations, the Act goes far beyond these conceptions.

Several restrictions are concerned with so-called prescription items and refills. Under the Act a prescription is regarded as a written order by the practitioner for a specific quantity of drug to meet a patient's specific needs. A prescription, then, cannot be refilled according to current interpretation of the Federal Food, Drug and Cosmetic Act without specific authorization of the physician, dentist, or veterinarian.

To refill the prescription without authorization is in the eyes of the Administration equivalent to an over-the-counter sale. This is prohibited by law and pharmacists are not permitted to dispense prescription items without specific authorization. This means that the practitioner must authorize as many refills as he believes are necessary for the patient for whom the prescription is intended at the time he writes the prescription.

If authorization for refills is missing from the original prescription, according to the administration, the pharmacist must assume that the doctor intended the prescription be filled only once. The doctor can issue instructions later for refills if such action seems indicated. These later instructions to the pharmacist may be oral or written, but they must be issued directly to the pharmacist and not indirectly through the patient.

Prescription drugs are those which carry on the label a statement such as "Caution, To be dispensed only by or on prescription of a physician, dentist, or veterinarian." If such a legend is not present on the label, the item presumably is a so-called non-Rx legend drug. In this case the labeling must bear adequate directions for use—which means self-medication. If a drug bears an Rx legend it cannot be sold without a written prescription.

At times pharmacists must place on a prescription label certain warnings; for example, "Warning: May be habit forming." This is done if the drug is a narcotic or hypnotic substance named in a certain section of the Act, if the doctor does not mark the prescription order as not refillable or if refilling is not prohibited by local law. If the doctor specifies in the prescription order that it may be refilled a certain number of times at stated intervals and that it is not refillable after the last filling, none of the dispensed material is required to bear the warning label.

Certain potent drugs must bear a warning. This is true of thiourcil, prophylthiouracil and pentaquinine. Patients must be warned of untoward symptoms. Also caution against larger doses or taking for a longer time than specifically directed should be noted.

Prescriptions for drugs bearing the Rx legend must be written. Oral prescriptions can be recognized by a pharmacist only in times of emergency.

Practitioners who dispense as a bona fide part of their professional practice are not subject to the labeling requirements. Nevertheless, it is wise to supplement oral directions and warnings with label notations on dispensed packages.

Prescription Writing: *Council on Pharmacy and Chemistry*, *J.A.M.A.* **140**:1157 (August 6) 1949.

Motion Sickness

Air sickness and sea sickness may be defined as conditions caused by frequently repeated oscillatory movements of the body in a ship or airplane. They are characterized by dizziness, nausea, vomiting, pallor, and sweating. The two conditions in all probability originate from the same source.

In a ship the pitching, seesaw movements on a transverse axis through the center of the ship, the rolling movement on its long axis, the movement of the entire ship up and down, and the vibration occurring in most ships constitute the usual motions to which a passenger is subjected.

In airplane travel vertical accelerations, excessive rotary motions, and vibrations bring on the disturbance. There have been many explanations as to just what happens to initiate the condition. Available evidence favors the belief that motion sickness is essentially due to disturbed vestibular function. Visual, psychogenic, and kinesthetic factors play a minor role varying with the person.

Symptoms may come on without warning: (1) A person who was previously in good spirits may suddenly become quiet and subdued. (2) He feels nauseated and is aware of excessive salivation. (3) Mental depression is almost constantly present. (4) Vomiting may then take place with mild headache. (5) Pallor and cold sweats are common. (6) True vertigo is rare.

There are no characteristic objective signs. There may be a drop in systolic blood pressure accompanied by tachycardia or a slow pulse rate. The nervous component in both air and sea sickness is important at times.

Some persons will develop the condition after the briefest possible exposure. Bad odors or poor ventilation may induce the condition.

Real help is obtained by fixing the eye on a definite object in space. This is true in both air sickness and sea sickness. The eye should not be allowed to shift with the position of the airplane as the earth or sky will swim past the eye and produce dizziness or nausea. This is comparable to the development of the condition when one whirls rapidly on a piano stool. The eye should remain fixed on an object on the ground or on the horizon.

Abdominal belts and supports have been found to be helpful by many. They help to reduce the movement of the heavy viscera and to prevent venous pressure changes in the abdominal veins. If it is possible to lie supine in the center of the airplane or ship less disturbance is apt to be felt.

Many drugs have been advocated which (a) act as sedatives to the entire organism or (b) effectively suppress the parasympathetic nervous system. The combination of belladonna and a sedative drug has been recommended. Sodium amytal and phenobarbital are the sedative drugs of choice.

(Any drug which causes dilatation of the pupils or reduces the efficiency by sedation might be questioned by the military forces. However, the use of moderate doses of these drugs might be preferred even in combat to the incapacity which severe motion sickness induces.)

The administration of hyoscine, 0.6 milligram, is exceedingly effective in the prevention of air sickness; it does not result in deterioration of either mental or physical functioning.

Motion sickness was studied during World War II. Several drugs were used in an attempt to control its symptoms but no drug has been found that can be used liberally and repeatedly. Some drugs which were apparently successful often produced side effects which were as annoying as the motion sickness itself.

Dramamine, an antihistaminic drug, has proved effective both in the prophylactic and active treatment of seasickness. It is expected that it will prove equally effective in other forms of motion sickness.

It is powerful and non-toxic. In well-controlled tests the drug proved exceedingly effective in seasickness whether administered rectally or orally. This is an advantage in patients too sick to take the drug by the oral route.

The administration is simplified by the fact that a daily dosage of 400 milligrams offers a satisfactory prophylactic and therapeutic result. It is given in 100-milligram doses before meals and before retiring. Many persons may obtain a satisfactory effect from 50-milligram doses. In such patients it is recommended that one-half tablet be taken with meals and before retiring.

Because dramamine is an antihistaminic drug, side reactions should be expected in an occasional patient. The commonest reaction experienced in this class of agents is drowsiness. Patients should be warned of this possibility and advised against operating motor vehicles and against similar pursuits during the period of medication.

Cecil, Russell L.: A Textbook of Medicine, ed. 7, Philadelphia, W. B. Saunders Company, 1948, *pages* 561-562.
Dramamine, G. D. Searle & Co. Chicago, 1949.

Diarrhea

The most distressing of all intestinal symptoms is diarrhea. It is usually accompanied with pain, nausea, and colic.

The condition is a symptom of prime importance in some conditions like food poisoning. In others, as in a neurosis, it is of secondary importance. In any case, relief is welcomed by the patient.

Diarrhea is caused by local irritating or inflammatory reactions in the mucosa of the bowel or by intestinal reflexes resulting from autonomic overflow, as in severe emotional states.

The conditions or agents bringing about the irritation are: (1) amebiasis, (2) bacillary infection, (3) food poisoning from bacteriotoxins involving unsanitarily or improperly prepared food, (4) the important matter of Salmonella infection in infants, or infant diarrhea in general, (5) local irritation from heavy metals or other chemical compounds, (6) allergic reactions, and (7) psychoneurotic reactions.

With regard to amebiasis as a cause it should be recognized that surveys made in various sections of this country show that between 5 and 10 per cent of the people generally harbor the cysts of Endomeba histolytica. Of this number some 50 per cent may show symptoms referrable to the intestinal tract. It is wise to search for the amebae whenever persistent diarrhea is encountered.

As a secondary symptom, diarrhea is recognized in many metabolic conditions. These include: (1) avitaminoses, particularly pellagra and sprue in which there is a persistent though sometimes mild diarrhea, (2) thyrotoxicosis, (3) nephritis, liver cirrhosis, and cardiac decompensation, (4) chronic ulcerative colitis, and (5) intestinal neoplastic disease. Also diarrhea may be a serious condition in an acute infection.

The results of diarrhea may be serious. Secretion of fluid into the bowel may result in severe dehydration if the diarrhea is acute and intense. Severe dehydration may result in the development of fever and shock. Associated with the diarrhea and loss of water there is always the loss of salt in the bowel producing a disturbance in electrolyte balance. This is especially true with regard to loss of potassium.

A serious result of diarrhea may be alteration of the intestinal flora. There is a delicate balance of intestinal flora with regard to organisms which are nonpathogenic and to various antibiotic factors normally found in the intestinal tract. Under certain conditions, even nonpathogenic organisms may produce reactions and lead to local irritations which can produce diarrhea.

There is a possibility of nutritional

disturbances as a result of diarrhea. This may occur from failure of vitamin absorption, from hurried excretion of vitamins, or from failure to take food, associated with the nausea accompanying the diarrhea.

Successful management depends upon the recognition and appraisal of the extent of the process in the patient. Important factors are the acuity, intensity, and chronicity of the process.

An acute intense diarrhea is likely to involve a great deal of local irritation and inflammation and result in desquamation of mucosa of the bowel. A prolonged intense diarrhea is likely to involve dehydration and disturbance of electrolyte balance. It is in prolonged mild diarrhea that one is likely to find emotional disturbances.

The specific management must be based essentially upon the recognition of the cause. The general management is usually based on an appreciation of the extent of the pathology and physiology involved in the symptoms of the individual patient.

Leake, Chauncey D.: The Clinical Management of Diarrhea, Postgrad. Med. **6**:1-5 (July) 1949.

Rhinoplasty

Until recently, rhinoplasty was performed chiefly for cosmetic reasons. It has become apparent that rhinoplasty is helpful in improving nasal physiology and respiration. This is particularly true where septal deflections are found to interfere with breathing.

Indications for rhinoplasty may be classified into: (1) physiologic indications and (2) psychologic indications. Physiologic indications include (1) congenital malformed noses and (2) malformations due to trauma or disease. The psychologic indications are intimately a part of the restoration of the patient's ego by eradication of the stigma which may have caused the patient tremendous self-depreciation.

In brief, the newer concepts teach that when the septal deviation is limited to the anterior buttress of cartilage, the classical submucous resection is of little value in relieving the difficulty in breathing. The patient does not breathe well after this operation because the support which has been untouched surgically still constitutes the obstruction to breathing. Thus the respiration remains permanently impaired.

The "saddle nose" which is occasionally seen after the submucous resection is due to the resultant pull from fibrosis and contraction of tissue from four to six weeks after the operation. It is not due to the loss of support due to the removal of the cartilage itself. If the saddle nose were due to the removal of the cartilage, the deformity should arise immediately at the time of surgical removal. However, the deformity arises from the subsequent contraction and healing.

It is being recognized more and more by the rhinologist that deformities of the upper and lower lateral cartilages, especially if associated with deviations of the nasal septum, result in marked nasal obstruction and in poor physiologic breathing. A nose which looks good but through which the patient cannot breathe normally is of little comfort.

Air currents travel in a definite direction on inspiration through the nares between the middle turbinates and septum and then downward through the choanae. On expiration they take the same course but in the opposite direction. Any interference with these air currents inevitably results in symptoms of nasal obstruction. A deformity either in the cartilaginous vault or the nasal bones will contribute to interference in the passage of air into or out of the nose.

A too-dependent nose or nasal tip will shunt the air currents to the dorsum of the nose creating eddies at this part. A too-elevated tip will direct the currents of air along the floor of the nose to the choanae.

A variation in pressure normally exists in the nose during inspiration and expiration. This varies from minus 6 centimeters of water during inspiration to plus 6 centimeters of water during expiration. Any abnormality in the shape or form of the nares or upper lateral cartilages prevents normal nasal respiration from taking place.

Under proper physiologic conditions the nares are smaller than the choanae. This aids in building up the negative pressure of inspiration. On expiration, the air passing through the choanae meets a resistance as it flows through the narrow nares and so helps to maintain a positive pressure. Too-wide nares, therefore, result in a drop in the negative pressure as well as the positive pressure. Nares that are too narrow may increase the negative pressure to a point where collapsed alae may result .

Levitt, Edward J.: Rhinoplasty and Nasal Respiration, J. Michigan M. Soc. **48**:992-996 (August) 1949.

Contact Lens

Contact lenses were first suggested by Sir John F. W. Herschel, a British astronomer, in 1827. Wearable lenses were not made until the latter part of the nineteenth century. These were made chiefly by the Zeiss Optical Company in Jena, Germany. These lenses were used primarily for pathologic conditions which could not be corrected by spectacles.

Considerable progress in the manufacturing and fitting of contact lenses has been made in the United States in the last few years. Not only are contact lenses now used for conditions which spectacle lenses will not correct, but many persons wear them for cosmetic reasons as well as for safety in certain sports and occupations.

Despite extensive commercial advertising, contact lenses will not take the place of spectacles in most cases in which ordinary eye glasses give serviceable vision. In these cases, contact lenses may be a useful adjunct to spectacles but they do not enable most persons to discard their glasses completely.

There is a large group of persons who have an aversion to wearing spectacles. Many practitioners realize

the importance of this mental attitude. Contact lenses for these persons may be a great boon. However, the public should not be oversold on the use of contact lenses. Some manufacturers and practitioners have misused the public vanity through unwarranted claims for their products and services.

Two thousand questionnaires were sent out to certified specialists of the American Board of Ophthalmology asking for a report and observations on contact lenses. These covered several specific phases of the problem. Five hundred seventy-six of the questionnaires were returned. They all agreed that the patients deriving the greatest benefit from contact lenses are those with keratoconus.

The complaints most frequently mentioned were: (1) The limited time that most patients can tolerate the lenses. (2) The solution is unsatisfactory. More research work should be done to produce a better solution which would prevent foggy conditions developing on the lenses. (3) Lenses are too expensive. (4) Many patients who buy the lenses discard them because of dissatisfaction.

The suggestion noted on the majority of questionnaires were the following: (1) Ophthalmologists should learn more about contact lenses by courses given at association gatherings or by the establishment of contact lens centers. (2) Patients should be discouraged in attempting to wear contact lenses except for pathologic or occupational reasons. (3) There is too much commercialization and exploitation by manufacturers; this should be controlled.

In general, it was agreed that the whole subject of contact lenses is still in a research period. Even the National Better Business Bureau has asked the committee for an expression of opinion regarding contact lens advertising. As a result the American Committee on Optics and Visual Physiology made several recommendations. These have to do mainly with the prescribing and fitting of contact lenses. Also the Committee stated that medical opinion should be secured in every case.

Berens, Conrad: The Contact Lens Problem, J. A. M. A. **140**:602-603 (June 18) 1949.

Noise vs. Hearing

Noise is regarded by psychiatrists and psychologists as a serious threat to health. Long-continued noise (1) menaces health and destroys efficiency, (2) produces fatigue, which impairs efficiency, and (3) encourages inattention and lack of concentration.

The nervous system is not constituted to take the continued battering of noise. A person becomes jumpy, jittery, and irritable under the impact of continuous noise. Neurasthenia and psychasthenia may develop. Some cases of insanity have been caused by the effect of persistent noise on nervous systems unable to adjust to such a bombardment.

Business executives realize that noise causes inattention, lack of concentration, and lack of efficiency. Their own offices are usually placed in a quiet sector and are usually sound proofed and insulated.

Certain facts are evident: 1. Exposure to extremely loud sounds over a long period results in impaired hearing. 2. The louder the sound, the greater is the impairment over a similar period. 3. The longer the period of exposure to the same sound level, the greater is the hearing impairment.

All ears are probably susceptible to high levels of sound intensity; all ears, however, are not equally susceptible. Ears with a pre-existing conduction lesion are probably less susceptible than are ears with normal hearing. Also the ears of the young are probably more susceptible than those of middle or advanced age.

Continued noise above a 90-decibel level can be considered to have a damaging effect on hearing. The noise level of the ordinary office is about 40 decibels, that of a busy street about 65 decibels, and that of heavy traffic about 80 decibels.

It is generally believed that intense noise of high pitch is more injurious to the hearing than when the pitch is lower. Besides the intensity of the noise other factors to be considered are: (1) The length of exposure. (2) The length of exposure per period. (3) Whether the sound stimulus is continuous or interrupted. (4) The length of interruption. (5) The type of space and environment, and whether there is a reverberation or not. (6) The age of the person. (7) Previous ear or associated disease.

The hearing defect caused by prolonged exposure to loud noise is greater for high tones than for low tones. The initial effect of exposure to loud noise involves the hearing for high tones only and, therefore, is not easily discernible by the person exposed. However, the longer the exposure the more likely is a gradual loss of hearing in the range of frequencies concerned in speech. The development of this noise deafness is slow and insidious and the person is apt to disregard it until he is rather deaf. (This is particularly true if he has a well-paid job.)

No form of treatment is effective once the lesion has occurred in the neuroepithelium of Corti's organ. For this reason, prevention of the lesion is the only means of attack. Sounds of injurious intensity must be prevented from reaching the ear. This entails education, proper designing of buildings and machinery, and in many cases, the use of some type of ear plugs.

A rigid pre-employment hearing examination is as important as the pre-employment physical examination. It is not feasible to give hearing tests to all workers at the present time because of the cost and time involved. However, pre-employment hearing tests are feasible.

Professional men should consider the noise factor in their practices as it has a bearing in several ways. They should be aware of the effect of noise on patients and also the effect of the elimination of noise on the patient and office personnel.

Grove, W. E.: Will Noise Damage One's Hearing?, J.A.M.A. **140**:674-677 (June 25) 1949.

Contra-Angles

More of the Aged Will be with Us

Old people are around us everywhere: relatives, friends, and patients. Every year there will be more of the elderly in the population. They have problems unique to them. Among their problems are several concerned with dental procedures. The bacteriostatic power of the saliva is reduced in senescence. The result is often an acute form of caries. The soft tissues and bone have frequently undergone regressive and degenerative change. The result is severe periodontal disease or rapid resorption of residual tissues. The tonicity of the neuromuscular system is usually lowered in the elderly. The result is difficulty with prosthetic appliances.

It is heartening to know that there is a group of serious scientists who are concerned with all the problems of the ageing. The group is the Gerontological Society, Incorporated. It is made up of sociologists, psychologists, biochemists, physicians, and interested administrators of old age assistance programs.

Several weeks ago I was given the opportunity to present the dental problems of senescence before a symposium on nutrition sponsored by the Gerontological Society. The chairman of this symposium was the world-known author of *Geriatric Medicine*, Edward J. Stieglitz, M.D. As I waited my turn to speak I was busy note-taking the remarks made by other speakers. The ideas came so fast that I am regretfully unable to give credit where it may be due, but here are some of the thoughts that I collected:

Second childhood is an extension of the first childhood. The residual infantile dependent patterns may be

NEW TICONIUM "Preview" MODELS!

Now you can show your patients that Ticonium case before it's made! These attractive models (on which the case is dramatically painted) let the patient SEE! Simple, quick, yet permanent — that's why hundreds of dentists who have seen Ticonium "PREVIEWS" say they are the best convincers they've ever seen.
"PREVIEW" Models are available only at your Ticonium Laboratory!

Another FIRST for dentistry by TICONIUM

TICONIUM

413 North Pearl Street, Albany, N. Y.

BINDERS
available for immediate delivery.
Each holds a complete volume.
Price, $3.00, Postpaid
(50c extra postage for shipment to other countries)
DENTAL DIGEST 1005 Liberty Ave. Pittsburgh 22, Pa.

Ames
Crown and Bridge Cement

THE PRODUCT WITH A CLINICAL PEDIGREE

used by Discriminating Dentists

AMES
Dental Cements
THE W. V-B AMES CO.
FREMONT OHIO

masked in middle life by conventionality. If our early years are rich in emotional assets, we will receive generous dividends in later life. If we are emotionally and spiritually poverty-ridden, dependent, suspicious, poorly adjusted in early life we may expect a bankrupt old age.

Rigidity of personality is harder to cope with than hostility; the strict, to-the-letter-of-the-law conformist is harder to manage than the unconventional person. Strength of character in any age is not iron-clad rigidity but the ability to adapt and change on the basis of new evidence or more facts presented. We frequently confuse pigheadedness for strength and stubbornness for character. It is unlikely that the mellow oldster will receive this blessing in full bloom in his senescence. It is a flower that blossoms in the aged if the seed was planted in early life.

On beauty in the aged we can do no better than quote from Alexis Carrel:[1]

"The shape of the face, the mouth, the cheeks, the eyelids, and the lines of the visage are determined by the habitual condition of the flat muscles, which move in the adipose tissue underlying the skin. And the state of these muscles depends on that of our mind. Indeed, each individual can give his face the expression that he chooses. But he does not keep such a mask permanently. Unwittingly, our visage progressively models itself upon our states of consciousness. With the advance of age it becomes more and more pregnant with the feelings, the appetites, and the aspirations of the whole being. The beauty of youth comes from the natural harmony of the lineaments of the human face. That, so rare, of an old man, from his soul."

The mental traits of the elderly are not so much influenced by the chronologic age as by the state of health. A sick body may carry the objectionable traits of senility at 60; the vigorously healthy body at 85 may have none of the unpleasant characteristics. This is of particular interest to dentists because good health in the aged is associated with adequate nutrition, adequate nutrition with proper digestion, and digestion with proper preparation of food in the mouth.

This is Doctor Stieglitz speaking: "Recent studies point out that calcium requirements are greatly *increased* in later years. The older person needs more calcium than the young adult to maintain calcium balance. Calcium loss contributes to bone fragility. The importance of milk (as a source of both protein and calcium) for the elderly is thus once more reemphasized. Newer knowledge of the role of protein in tissue repair (typically retarded in the aged) and in the correction and prevention of anemia, has made possible immense advances in geriatric surgery.

"Both so-called 'normal' and abnormal aging are inseparably linked with nutrition. We are today what we are because of what happened to us in our yesterdays. The older we become and the more yesterdays we accumulate, the more significant become all past experiences, both good and bad, nutritional or otherwise.

[1]Carrel, Alexis: Man the Unknown, New York and London, Harper & Brothers, 1935.

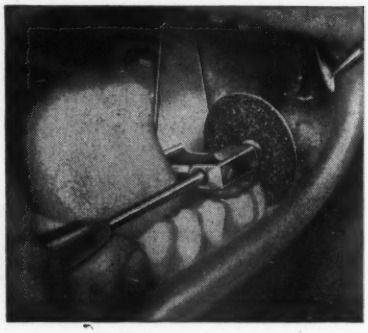
Others Have Tried BS POLISHERS Why Not You?

Many dentists have sent in the coupon below and found out why BS Polishers are preferred over many others. They can readily understand why this soft, flexible rubber polisher makes a patient feel safe and comfortable, also why it is easy for it to clean and polish every tooth to a lustre brightness. Why don't you find out these facts for yourself? Send the coupon in now!

Young Dental Mfg. Co.
St. Louis 8, Mo.

Gentlemen:
Without any obligation send us one of your BS POLISHERS—ABSOLUTELY FREE.

NAME .....
ADDRESS .....
CITY .....
STATE .....



Reg. U. S. Patent Office

3/16 + Protection

The HAWCO DISC GUARD is designed to aid you in the preparation of difficult interproximal gingival margins. It provides 100% protection for the tongue. The long mandrels will allow you to reach at least 3/16-inch lower on INTERPROXIMAL GINGIVAL MARGINS in the lower molar region without hand-piece interference. Mandrels may be shortened, if desired.

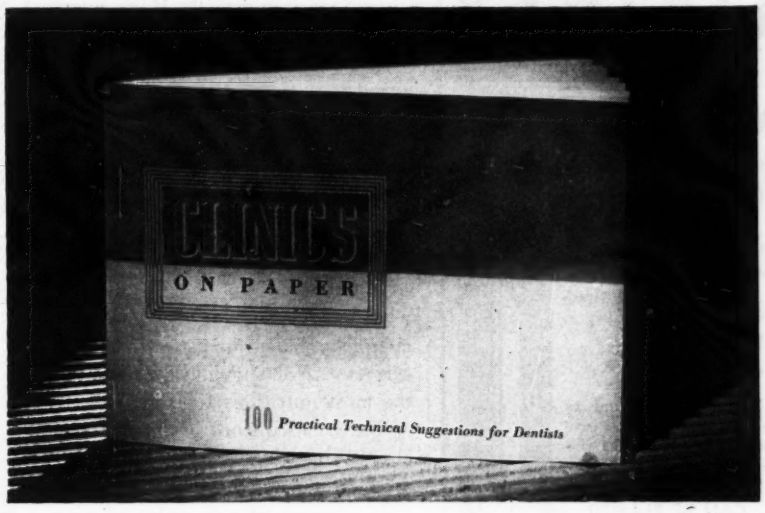
Try this guard on your next DIFFICULT preparation . . . Sold on 30-day trial—fully guaranteed through your dealer . . . Price $5.00, including 3-inch mandrel, 2½-inch mandrel, extra retaining screw.

HAWKINSON PRODUCTS CO.
P. O. Box 683, Detroit 31, Mich.

CLINICS ON PAPER

A PRACTICAL BOOKLET FOR EVERY DENTIST

Volume Three



IT'S ALL NEW... NO DUPLICATION

A typical letter concerning previous volumes . . .

[redacted]

The Dental Digest
Gentlemen:—
Inclosed find check for a copy of Clinics on paper which you will please send to the inclosed address with my compliments.
It's too bad every dentist does not know of this clever helpful publication.
Many thanks
Resp. yours,
[redacted]

The above is a typical letter concerning previous volumes of *Clinics On Paper*. Your opinion of volume three will coincide with that expressed in this letter. Order your copy today. The coupon is for your convenience.

Volume three of *Clinics On Paper* will prove to be a valuable reference booklet for any practitioner. It was announced only a few months ago and already several thousand dentists have realized its tangible ready-reference value and have a copy on hand in their operatories and laboratories.

The latest volume of *Clinics On Paper* is all new. It contains 100 practical technical suggestions for dentists, none of which appeared in volumes one and two. There is no duplication and, like the preceding volumes, the new booklet is thoroughly indexed with respect to suggestions for *Operative Procedures, Prosthetic Procedures, Roentgenographic Aids, Surgical Aids, Laboratory Aids, etc.* Colored tabs designate the various subjects for easy and quick reference.

Make certain of obtaining your copy of volume three of *Clinics On Paper* by entering your order now. The investment required is negligible because, as a special DENTAL DIGEST service, we are continuing our policy of offering this type of material practically at cost. Prices, $1.00 per copy to regular DENTAL DIGEST subscribers; $2.00 per copy to non-subscribers. We refer non-subscribers to the special combination offer mentioned in coupon below.

DENTAL DIGEST, 1005 Liberty Avenue, Pittsburgh 22, Pa.

☐ Here is $1.00 for a copy of Volume Three of CLINICS ON PAPER. Please send immediately. I am a subscriber to Dental Digest.

☐ Here is $5.00. Please enter my order on the basis of sixteen issues of Dental Digest and a copy of Volume Three of CLINICS ON PAPER.

☐ Here is $1.00. Send me a copy of Volume Two; I understand there is a very limited supply available.

Dr. .....

Address .....

City .....

Dealer .....

You will want the new

28
Gauge

RIGIDEX
Hypodermic

NEEDLES

The standard for high quality for many years.

1. **RUSTLESS STEEL**
Not affected by Iodine, salts, and many acids.
2. **SEAMLESS TUBING**
No seam to open upon sudden bending.
3. **RAZOR-SHARP POINT**
Ground and honed to a spearpoint which promotes smooth and painless penetration of tissue.
4. **CAN BE FLAMED**
Proper flaming will not injure RIGIDEX NEEDLES.
5. **UNIFORM WALL THICKNESS**
Secures rigidity and strength and eliminates weak spots.
6. **RIGID**
Easy to maintain in a straight line.
7. **NON-SLIP BALL**
Made of nickel-silver alloy.
8. **RESIST BREAKAGE**
Will bend to 45 degrees without breaking.
9. **HAND-FINISHED POINTS**
Finished by experienced hands, they are superior to machine-cut points.
10. **DO NOT CLOG**
Always a uniform and free flow of the solution.

1", 1¼", 1⅝", 1⅞"
Lengths
Also made in
23, 25 and 27 Ga.

If you are not already using RIGIDEX Needles, send for a sample, specifying length and gauge.

Available at All Dental Depots

INTERSTATE DENTAL CO., INC.
220 West 42nd Street
NEW YORK 18, N.Y.

The nutrition of the youth effects his health in maturity, senescence, and old age, but the nutrition of each period of life presents problems peculiar to the period. To age is to change."

It is apparent what these words should mean to dentists. If the elderly person is in calcium imbalance, bone fragility is likely. This may explain rapid bone resorption under denture bases. If the elderly is suffering from hypoproteinemia, tissues do not repair following extractions. With the newer knowledge of nutrition we must reapproach many of our denture problems among the aged. What many of them need is not new dentures but a new mode of living that includes a complete change in patterns of food selection. Nor should we forget that the most nutritious food available is of little consequence if the first process of digestion, namely, food preparation in the mouth, is inadequate.

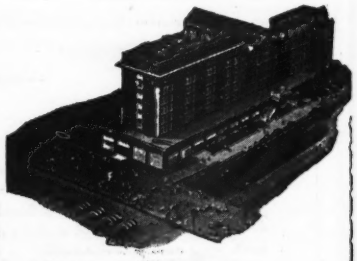
In support of this point of view Greene, Dreizen, and Spies[2] recently reported a study made among 446 carefully selected patients in a nutrition clinic. Two hundred and sixty-eight of these patients were edentulous. Of this number 219 had ill-fitting dentures, oral conditions which prevented the efficient use of dentures, or only one or no artificial dentures. Of the 178 dentulous patients, 82 had less than 3 occluding anterior and posterior teeth and no functional prosthetic replacements for their missing teeth. These investigators conclude: "These observations support our hypothesis that an intimate relationship exists between impaired masticatory function (masticatory insufficiency) and general nutritive failure."

What are the public attitudes toward older people? To find out, Professor Robert J. Havighurst of the Committee on Human Development of the University of Chicago questioned 1,000 people, aged 20 to 80. Activities of older people fell into 4 levels of approval:

Strong approval
Mild approval
Indifference
Disapproval

[2]Greene, Henry I.; Dreizen, Samuel; and Spies, Tom D.: A Clinical Survey of the Incidence of Impaired Masticatory Function in Patients of a Nutrition Clinic, J.A.D.A. **39**:561-571 (November) 1949.

EMESCO ENGINES
for
LABORATORY
or
EXTRA CHAIR
IN BENCH, FLOOR & WALL MODELS
Meisinger
150 FIFTH AVE. NEW YORK 11, N. Y.



HOTEL STRAND

ATLANTIC CITY'S HOTEL of DISTINCTION

Devoted to the wishes of a discriminating clientele and catering to their every want and embracing all the advantages of a delightful boardwalk hotel.

Spacious Colorful Lounges — Sun Tan Decks atop — Open and inclosed Solaria — Salt Water Baths in rooms — Garage on premises. Courteous atmosphere throughout.

When in Atlantic City
visit the
Famous Fiesta Lounge
RENOWNED FOR FINE FOOD
OPEN ALL YEAR
Under Ownership Management
EXCLUSIVE PENNA. AVE. AND BOARDWALK

1. *Activities Which are Strongly Approved.*

(A) Continues life as in middle age with "reasonable" tapering off.

(B) Participates in the activities of the "elders."

(C) Plays specific "old peoples' roles" that are highly favored.

2. *Activities Which are Mildly Approved.*

(A) Carries on activities started in earlier age with no diminution or perhaps slight increase of vigor.

(B) Plays specific "old peoples' roles" that are regarded permissive but not highly favored.

3. *Activities that are Viewed with Indifference or Mild Disapproval.*

(A) Stubbornly retains earlier patterns of behavior.

(B) Carries on in a slightly improvident, irresponsible manner.

(C) Plays a role which is reduced in approval value due to an element of bothersomeness or unconventionality that would be disliked in a person at any age.

4. *Activities that are Strongly Disapproved.*

(A) Inactivity and social isolation.

(B) Overactive, or prolongs activities of middle age beyond reason.

(C) Acts much younger than his age.

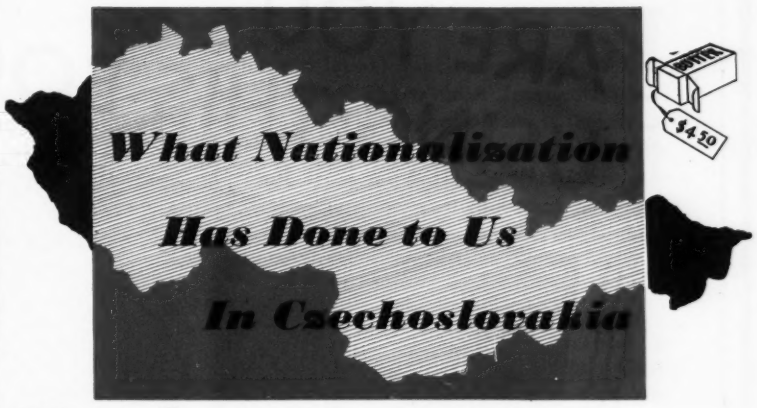
(D) Behaves "immorally."

(E) Refuses stubbornly to do the "obviously reasonable thing."

Professor Havighurst concluded from his study: "The people of the United States will hardly turn into reverers and worshippers of old age like the Chinese. The American philosophy which best fits the patterns of American life will be one of generosity, permissivity, and approval of the self-achieved pleasures and tasks of old age. Such a philosophy will have two guiding principles: First, people are expected to grow old at different rates, and second, each personality is expected to find its own pattern of roles."

This brief and pleasant encounter in the field with students of gerontology convinces me that the discussions of the particular problems of *gerodontology* should be given more prominence in the dental literature and on dental programs.—E.J.R.

In your ORAL HYGIENE this month



"I wrote this brief report as a dentist still practicing in Czechoslovakia. If the authorities were to know my name I would be considered an enemy of the regime and subject to forced labor or worse."

That is the way the author introduces an article which makes cold shivvers run down our spine—a story of the professional man completely subjugated to the state under a Communist government. His economic status (48 cents income for an extraction with anesthetic; 30 dollars expense for a pair of shoes) is pitiful, but his loss of independence in thought and action is even harder for the professional man to endure. You will want to read this article

★ ★ ★

"City Dentist—Country Style"—Doctor Irving L. Cook can step from his dental office into a trout stream . . . so can his patients! Here is the story of a man bold enough to dream of carrying on a city practice in the woods of Wisconsin, and resourceful enough to make that dream come true. Jim Hurlbut, NBC commentator, tells the story.

★ ★ ★

"What can I do for this cold sore?" . . . Doctors Lester Hollander and Stanton M. Hardy supply the answer by describing "A New Treatment for Herpes Simplex."

★ ★ ★

Who should govern requirements for specialists? "The general practitioner," says Doctor A. H. Clark, presenting his views in the article, "Defense Against 'Specialty Boards'." Whether you are a specialist or a general practitioner, you will find the article well worth reading.

★ ★ ★

"When an angry patient storms into your office, slams his hand down on your desk, and complains of a grievance he has—or thinks he has—how do you handle him?" . . . David Markstein asks the question and gives the answer in a psychologically sound discussion of "How to Handle the Angry Patient."

★ ★ ★

Have you had a troublesome day? . . . Then read "Do Dentists Earn Their Money?" Doctor Edward L. Wharton describes one of "those days" in an article that will seem serious or amusing, depending on the kind of day you, yourself, have had. In any case, you will be thankful that you have no "Aunt Jennie"—or have you?

★ ★ ★

The transmission of roentgenograms by wire photography is an interesting news item—as is the report of Doctor John W. Knutson, chief of the division of dental public health, in regard to fluoride treatments in community programs. Another short item discusses the survey carried out by the British Working Party "to ascertain the average chairside time taken by general dental practitioners in the National Health Service, and in private practice, to complete each type of dental treatment; excluding orthodontic treatment."

★ ★ ★

There are all of the regular monthly departments, too. Don't miss *them!*

ARE YOU USING THIS BOOK

IN YOUR PRACTICE?

Thousands of practitioners have already ordered this tenth reprinting since it was announced a few months ago . . . . . .

THE NEW CHART: There are 31 charts in the *tenth* (and latest) reprinting of *Visual Education in Dentistry*. The newest addition to this ever-popular series of charts most frequently used by practitioners everywhere in their patient-education programs is a four-page chart in color entitled *THE DANGERS OF PYORRHEA AND POSSIBLE COMPLICATIONS*. It portrays pictorially possible complications in the blood stream which could result from a pyorrhetic condition (see pages 395-98 in September *Dental Digest*). Many practitioners are familiar with the other 30 charts in the booklet which they have been using regularly in their practices for many years. Each chart tells a specific story with easily understood illustrations and descriptions.

TYPICAL COMMENTS: "I have just seen your latest reprinting of Visual Education in Dentistry and think it is one of the most interesting and valuable sources of dental information for patients. I am planning to have my new office in about two weeks and by all means I should like to have at least two copies at that time. Will you, therefore, send the copies by air mail, charging me for the extra postal expense. Congratulations on the tenth reprinting!"—A. S. L. W. "Will you please send me information regarding patient-education material you have available. I am already using Visual Education in Dentistry with great satisfaction." D. L. R. "I am a subscriber to Dental Digest and have received Visual Education in Dentistry. I would like very much to have a second copy of the booklet. Enclosed is another $1.00. I make great use of this educational material." I. P. Space limitations make further quotations impractical but the above comments from recent letters exemplify the high regard of the dental profession for the booklet.

OVER 90,000 DISTRIBUTED: Several thousand copies of the latest reprinting have already been sold, bringing sales, since the original edition, over 92,000. Many practitioners are ordering two or more copies, realizing that the potential value of these charts cannot be over-estimated. Every practitioner should have at least two copies—one for use at the chair; the other for reception room use. *A better investment at small cost could not be made.*

SAME PRICES: The original edition of *Visual Education in Dentistry* contained 12 charts. Since then it has been enlarged considerably and at present the booklet contains 31 charts—the complete series to date. The prices of the original edition were $1.00 to regular subscribers to Dental Digest and $2.00 to non-subscribers. Those very same prices apply today despite the fact that paper and printing costs alone have increased over 100% since the original edition. We know the value of this material in making the public realize the *value of periodic dental treatment and the danger of neglect* and we feel it is our duty to keep the price of such ethical material within the means of everyone. We refer non-subscribers to Dental Digest to the special subscription combination offer mentioned in coupon. Why not send your order now?

DENTAL DIGEST, 1005 Liberty Ave., Pittsburgh 22, Pa.

☐ I am a subscriber to DENTAL DIGEST. Please enter my order for 1 ☐ copy; 2 ☐ copies of the new reprinting of "Visual Education in Dentistry." My remittance at the rate of $1.00 per copy is enclosed herewith.

☐ I am not a subscriber. Please enter my name on the subscription list for 16 issues of DENTAL DIGEST and one copy of "Visual Education in Dentistry" for $5.00. My remittance is herewith.

Dr. .....

Address .....

Dealer .....

CLINICAL AND LABORATORY SUGGESTIONS

(*See pages* 30 *and* 31)

Form to be Used by Contributors

To: Clinical and Laboratory Suggestions Editor

DENTAL DIGEST
708 Church Street
Evanston, Illinois

From: _____

_____

Subject: _____

Explanation of Procedure:

Sketch:

$10 will be paid to author on publication of accepted suggestions.

Ligation of Carotid Arteries for Neoplasms of the Head and Neck

Vosseler and Ficarra[1] show that in the treatment of eroding neoplasms of the head and neck ligation of the major arteries supplying these anatomic areas may become a necessity for the preservation of life. It may be necessary to ligate the common carotid artery or the external carotid artery, and sometimes certain of its branches.

[1]Voseler, A. J., and Ficarra, B. J.: Ligation of Carotid Arteries for Advanced Malignant Neoplasms of Head and Neck, *Archives of Surgery* **58**:35 (January) 1949.

The Purpose of Ligation

Ligation of these vessels is advocated (1) to protect against bleeding, as a preliminary step to a radical surgical procedure on the head or neck; (2) to control active hemorrhage; and (3) to diminish the blood supply to inoperable neoplastic lesions.

Report of Observation

1. The authors discuss the approach to the carotid sinus and present observations on 26 patients in whom ligation of the carotid arteries was performed for advanced neoplasm of the head and neck.

2. The survival of 21 patients indicates that this procedure is not associated with a formidable mortality.

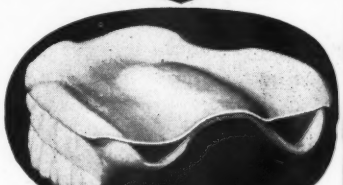
3. Follow-up studies on these patients indicate that the longest survival after operation was three years.

Conclusion

Ligation of the carotid arteries is advocated as a valuable aid in the management of patients with advanced malignant neoplasms of the head and neck.

From Current Medical Literature, *Journal of the American Medical Association* **140**:1121 (July 30) 1949.

Ardee
NEW EASY-TO-USE
Pliable Plastic
CUSHION
LINER



1. FUNCTIONAL IMPRESSIONS

To rebase or duplicate dentures quickly and easily, have your patients wear a sheet of ARDEE for a day or two. It will give you an accurate reproduction of the mouth—saving valuable chair time.

2. TEMPORARY RELINES

In ill-fitting, uncomfortable or immediate dentures, ARDEE gives complete suction, maximum stability and cushions all tender areas.

ARDEE is clean, tasteless, non-toxic and does not burn. Easily removed.
STAYS SOFT ALWAYS.

Box of 12 Sheets — $4.50

Order Through Your Dealer

Reliance
DENTAL MFG. CO.
22 EAST VAN BUREN ST., CHICAGO